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JULY 14, 1952 A.A.R. Mechanical Convention Number

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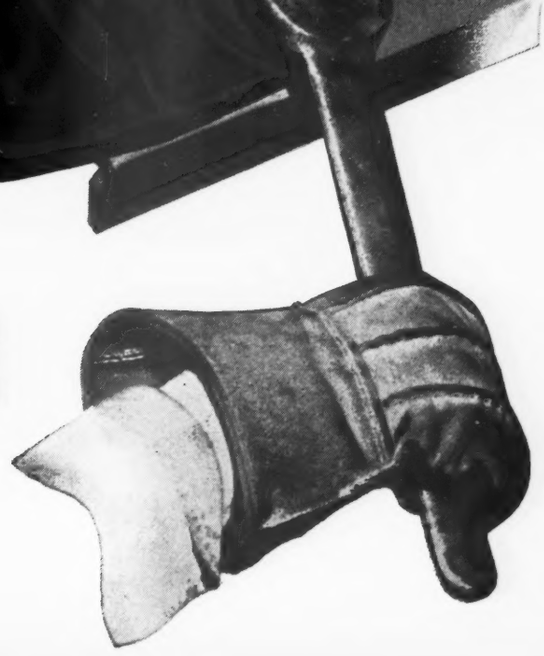

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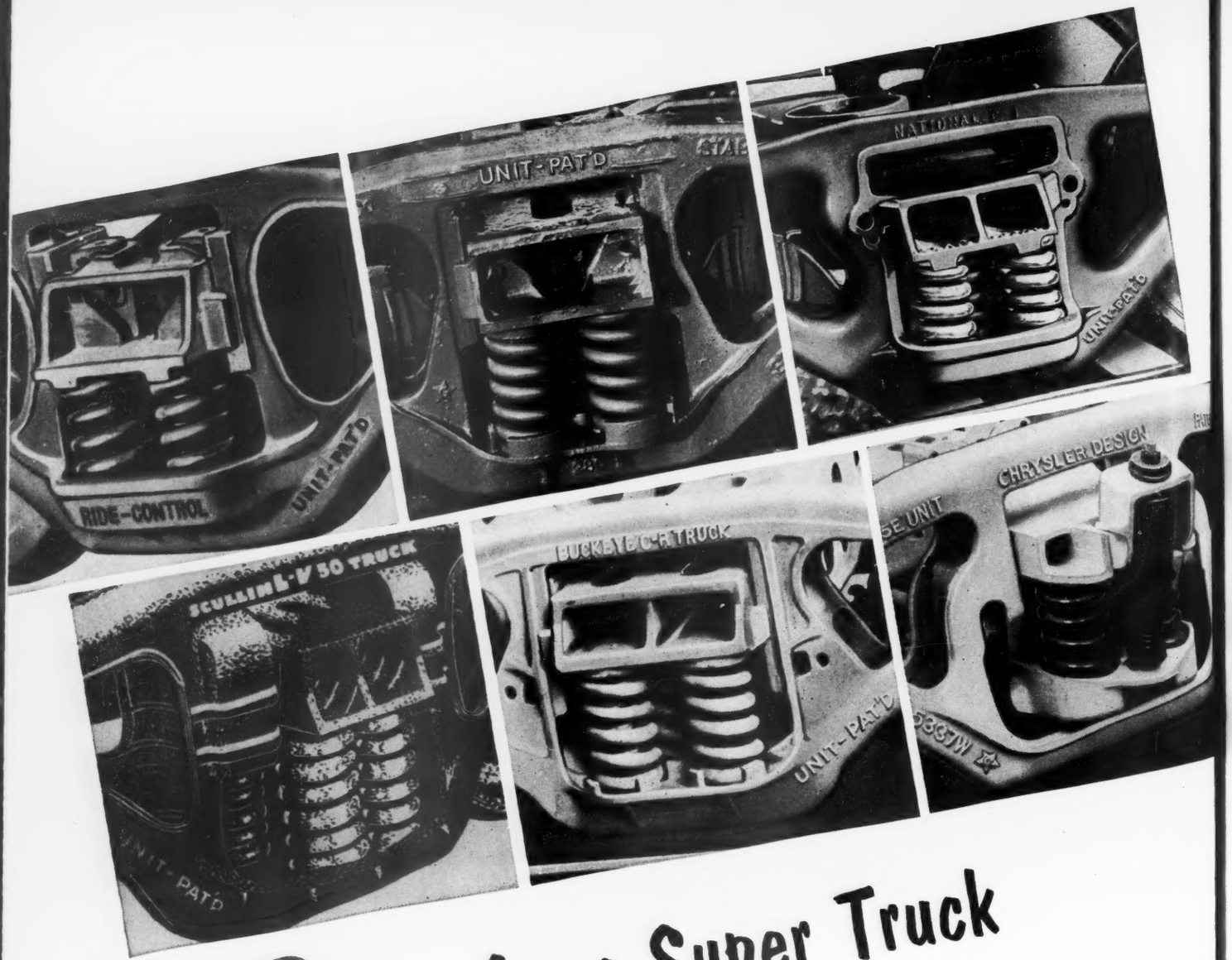

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Vol. 133, No. 2 July 14, 1952

RAILWAY AGE

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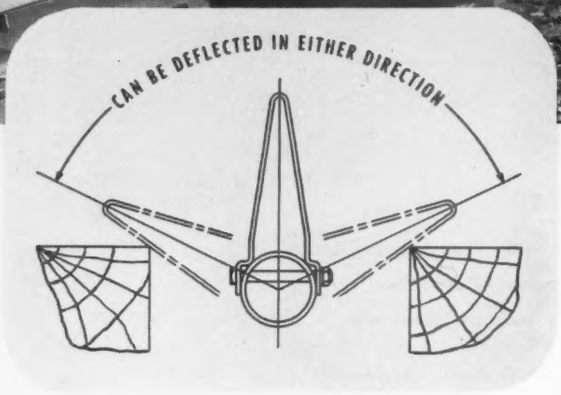

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WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, five months
1952 ..... $4,304,214,180
1951 4,179,377,060

Operating expenses, five months
1952 ..... $3,353,273,597
1951 3,288,475,864

Taxes, five months
1952 ..... $ 506,643,596
1951 477,808,199

Net railway operating income, five months
1952 ..... $ 373,798,186
1951 329,174,183

Net income, estimated, five months
1952 ..... $ 237,000,000
1951 208,000,000

Average price railroad stocks
July 8, 1952 ..... 63.58
July 10, 1951 ..... 50.25

Car loadings, revenue freight
26 weeks, 1952 18,536,117
26 weeks, 1951 19,918,313

Average daily freight car surplus
Week ended July 5, 1952 30,320
Week ended July 7, 1951 39,526

Average daily freight car shortage
Week ended July 5, 1952 3,640
Week ended July 7, 1951 6,065

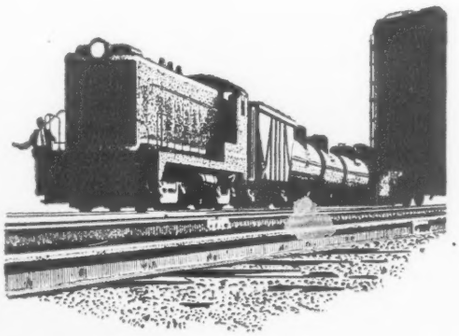
Freight cars delivered
June 1952 6,411
June 1951 9,644

Freight cars on order
July 1, 1952 99,615
July 1, 1951 147,725

Freight cars held for repairs
June 1, 1952 100,854
June 1, 1951 94,038

Net ton-miles per serviceable car per day
April 1952 (preliminary) 964
April 1951 1,042

Average number railroad employees
Mid-May 1952 1,242,620
Mid-May 1951 1,291,172



In This Issue . . .

IF REGULATION OF TRANSPORTATION IS FAULTY, the blame would seem to rest primarily upon the laws under which such regulation is conducted and, in turn, upon the unwillingness or inability of the transportation industry, itself, to agree upon and to insist upon needed changes in those laws. If that premise be accepted, the conclusion is clear; i.e., that the remedy for faulty regulation is a "streamlined" regulatory statute, the proposal for which should come from the transportation industry itself. These points are discussed in more detail in the editorial comment on page 59.

"TRAINS MAKE MONEY—without trains how can a railroad earn any revenue?" is a favorite question asked by Frederic C. Dumaine, Jr., chairman of the board and president of the New Haven. He is providing his own answer in the way he is guiding the development of the New Haven into "a wholly self-sufficient, economic property." Following the lead set down by the late F. C. Dumaine, Sr., who, with a group of other New Englanders, purchased stock control of the railroad in 1948, an interesting variety of managerial approaches and techniques is being introduced. These are described in an article beginning on page 61 of this issue.

AN INDOOR RIP TRACK—or rather four tracks—enclosed in a $543,000 building is one of the unusual railroad developments covered herein (page 66). It belongs to the Soo line at Minneapolis, and is equal in capacity to the road's nine former outdoor rip tracks at the same location. On page 71 is a description of the Electro-Motive Division's "treadmill" for testing diesel locomotives; and on page 68 one of the C&O's Greenbrier clinics for "testing" executives of railroads and other business organizations.

In Washington . . .

MORE DIESEL LOCOMOTIVES are going to be needed if the railroads' motive power fleet is to reach a "full mobilization" basis by July 1, 1956. In fact, the Defense Transport Administration says production of diesel units should average 312 per month from October 1, 1952, to July 1, 1954, and 333 a month for the two following years. These contemplated levels compare with average production of about 280 units per month from January 1, 1950, through last June 30. The D.T.A. study on which these requirements were based is summarized in the news pages, where attention is also called to the fact that estab-

WEEK AT A GLANCE

lishment of production goals "does not involve any commitment . . . to allocate the controlled materials that would be required."

AS CONGRESS ADJOURNED—just in time for the national political conventions—it left behind it little or no unfinished action on any transportation legislation which had progressed far enough through the legislative mill to be in shape for final passage or rejection. Left over for the 83rd congress, to be elected in November, are, of course, many bills introduced this year and considered in committee, but which never reached the floor. A review of transportation legislation acted on by the 82nd congress is included in the news pages of this issue.

NET INCOME for 1952's first five months has been estimated at $237 million, which represents a fairly satisfactory increase over the $208 million reported for the comparable period of last year. But the comparative showing for May alone was much less encouraging — only $55 million against $51 million — and with traffic down all along the line as a result of the steel strike, the showing for July is likely to be even more unsatisfactory.

PERSONNEL CHANGES held the spotlight in transportation news emanating from Washington last week. W. P. Bartel, I.C.C. secretary for the past 15 years, announced his intention to retire on August 31, just as the Senate was confirming one reappointment and two new appointments to the commission itself—Charles D. Mahaffie, Arthur F. Arpaia and Martin Kelso Elliott. In the A.A.R., Richard E. Keefer succeeds the late Edward R. Ford; and Jonathan E. Teal is leaving the D.T.A., at least temporarily.

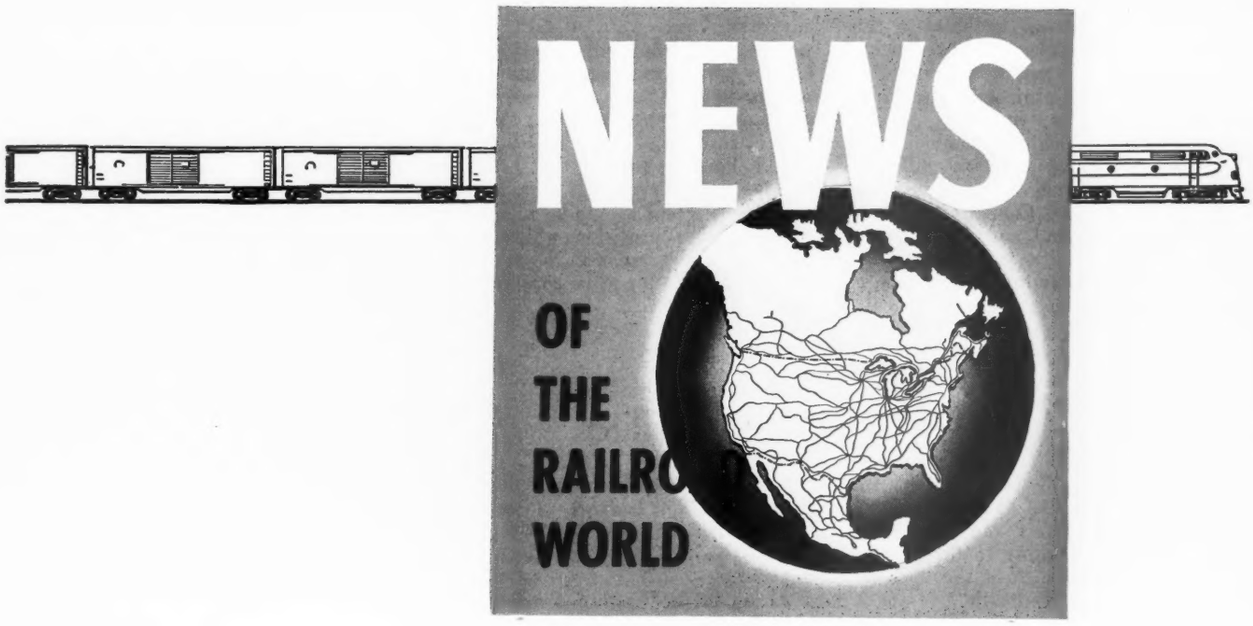
. . . And Elsewhere

NEW CHAIRMAN of the Mechanical Division of the Association of American Railroads is H. T. Cover, assistant vice-president and chief of motive power of the Pennsylvania. He succeeds B. M. Brown, general superintendent of motive power of the Southern Pacific. Mr. Cover's election to the chairmanship took place at the division's recent annual convention in San Francisco, a complete report of which begins on page 74.

REPUBLICAN CONVENTIONEERS virtually overwhelmed the Burlington in an effort to secure copies of a convention balloting "score card" which CB&Q people made up for delegates and for shipper friends. The card enabled state-by-state tabulation of four leading presidential candidates plus a "favorite son" through five ballots. Listed was the number of delegate votes allotted to each state and territory, and the total number of votes required to nominate a candidate. Copies mailed to shippers were intended for TV or radio-side use. "We could have used a lot more of them," a Burlington spokesman told *Railway Age*.

WOMEN make up most of the passenger list on air tourist flights, a scheduled air line discovered in a recent survey. In contrast to the standard fare flights—on which men comprise about 75 per cent of the travelers—the air line found that 61 per cent of all passengers on its lower cost coach flights were women.

THE POSSIBILITY that the St. Louis-San Francisco may shortly attempt to acquire control of the Central of Georgia is receiving increasing attention in various financial publications. Such control, if it should become effective, would combine the two carriers into a single system of nearly 7,000 miles, reaching into 10 states and extending from western Texas to the Atlantic coast at Savannah, and from St. Louis and Kansas City to the Gulf coast at Mobile and Pensacola. The two roads now have a physical connection at Birmingham, Ala.



Adjourned Congress Left Little Transport Legislation

No transport legislation of major importance was enacted in this year's session of the eighty-second Congress which adjourned "sine die" on July 7. In the absence of a special-session call from President Truman, the present Congress will not meet again; and all legislation left pending at various stages short of final enactment will die.

The session's principal enactment of interest to the railroads was the law passed in May to liberalize benefit provisions of the Railroad Unemployment Insurance Act. This was opposed by the carriers, but supported by the so-called "standard" railway labor organizations.

During the overtime meetings held on the session's last days, the Congress passed two bills which will ease the regulation of motor carriers. One of them, S.2357, provides for inclusion of horticultural commodities within the term "agricultural commodities" for purposes of the Motor Carrier Act's so-called agricultural exemptions. The second, S.2360, raises the maximum limit on securities which a motor carrier may issue without authority from the Interstate Commerce Commission. S.2357 was signed by President Truman on July 9.

Also passed in the last-minute rush was S.3161, which will set up, under I.C.C. jurisdiction, arrangements for filing, for recording purposes, of equipment trust agreements and other documents evidencing or relating to the lease, mortgage, conditional sale, or bailment of equipment. The recording "shall constitute notice to . . . all persons"; and will eliminate the necessity for recording under any other law—federal, state, or local.

As reported in *Railway Age* of July 7, page 14, the Congress also extended the Defense Production Act, thus continuing until June 30, 1953, the controls administered by the Defense Transport Administration. On the other hand, it refused to include the President's authority to seize the railroads among the "war" powers which it authorized the President to continue exercising during the present emergency.

The seizure power involved remains available to the President in time of war. It is the power embodied in the Act of August 29, 1916, under which the railroads were seized by President Truman and operated by the Army during the 21-month period from August 27, 1950, to May 23, 1952. The seizure power was then available because war with Japan had not been formally terminated, as it has since by the signing of the terminating treaty. Congress' refusal to include the seizure power among those "war" powers which it made "emergency" powers also, was in accord with proposals made by railroad labor unions.

Other actions of the session included adoption of resolutions calling for studies of the organization and operations of the I.C.C., and of the Railroad Retirement Act and "related problems." The latter is a joint undertaking of the Senate and House, while the I.C.C. study will be conducted by the Senate Committee on Interstate and Foreign Commerce.

Also passed were the usual appropriation bills, providing funds for the I.C.C., D.T.A., Railroad Retirement Board, National Mediation Board and National Railroad Adjustment Board. Other appropriations will continue federal-government subsidies and promotional activities in the fields of highway, water and air transport.

Among legislative proposals defeated during the session was the joint resolution to approve the United States-Canada agreement for construction of the proposed St. Lawrence seaway project. The defeat came despite several pleas by President Truman for favorable action.

Power Facilities

In this connection, the State Department announced on June 30 that the United States has joined with Canada in seeking formal approval of the construction of power facilities in the International Rapids section of the St. Lawrence. The approval is being sought in applications filed with the International Joint Commission. The applications do not contemplate that the federal government will participate in the development. That will be the job of "entities" designated by the two governments—perhaps state and provincial authorities. A Canadian note on the matter, which was made public by the State Department, stipulated that

Canada's undertaking to build a St. Lawrence seaway alone "is predicated on the construction and maintenance . . . of a sound power project in the International Rapids section."

Other pending legislation which was left to die included numerous bills introduced as a result of the Senate Interstate Commerce Committee's studies of domestic land and water transportation. The railroads failed to get reported from committee two of those bills to which they gave enthusiastic support. They were S.2518, which would have authorized general rate increases on 30 days' notice, without suspension by the I.C.C., upon the carriers' certification of their need for the additional revenue; and S.2519, which would have rewritten the Interstate Commerce Act's rule of rate making, the proposed new rule to be without the present rule's provision which makes the "effect of the rates on the movement of traffic" a matter to be considered by the commission.

CLASS I RAILROADS—UNITED STATES

	1951	1952
Month of May		
Total operating revenues	$870,315,262	$888,608,471
Total operating expenses	676,418,308	691,045,672
Operating ratio—per cent	77.72	77.77
Taxes	97,350,092	103,785,651
Net railway operating income (Earnings before charges)	82,970,254	76,717,336
Net income, after charges (estimated)	55,000,000	51,000,000
Five Months Ended May 31		
Total operating revenues	4,304,214,180	4,179,377,060
Total operating expenses	3,353,273,597	3,288,475,864
Operating ratio—per cent	77.91	78.68
Taxes	506,643,596	477,808,199
Net railway operating income (Earnings before charges	373,798,186	329,174,183
Net income, after charges (estimated)	237,000,000	208,000,000

Net Income for 1952 Reaches $237 Million

Class I railroads in the first five months this year had an estimated net income, after interest and rentals, of $237,000,000, according to the Bureau of Railway Economics of the Association of American Railroads.

The 1952 figure compares with net income of $208,000,000 for the first five months last year. Net railway operating income in the five-month period this year totaled $373,798,186, as compared with $329,174,183 in the same period last year.

Estimated results for May 1952 showed net income of $55,000,000 compared with $51,000,000 in May 1951. The May 1952 net railway operating income was $82,970,254. During the same month last year the net railway operating income totaled $76,717,336.

In the 12 months ended with May, the rate of return averaged 3.91 per cent, compared with 4.38 per cent for the 12 months ended with May 1951.

Five-Month Gross Up 3%

Gross in the first five months of 1952 amounted to $4,304,214,180 compared with $4,179,377,060 in the same period of 1951. Operating expenses amounted to $3,353,273,597 compared with $3,288,475,864. Thus, gross was up 3 per cent, and operating expenses were up 2 per cent.

Twenty Class I roads failed to earn interest and rentals in the first five months of 1952, of which 11 were in the Eastern district, one in the Southern region and eight in the Western district.

Of the territorial figures reported below, the A.A.R. statement gave all except the net railway operating incomes, which were taken from a summary issued by the Interstate Commerce Commission.

Results by Districts

Class I roads in the Eastern district in May this year had an estimated net income of $20,000,000 compared with $20,000,000 in May 1951. In the first five months of 1952 their estimated net income was $84,000,000 compared with $60,000,000 in the same period of 1951.

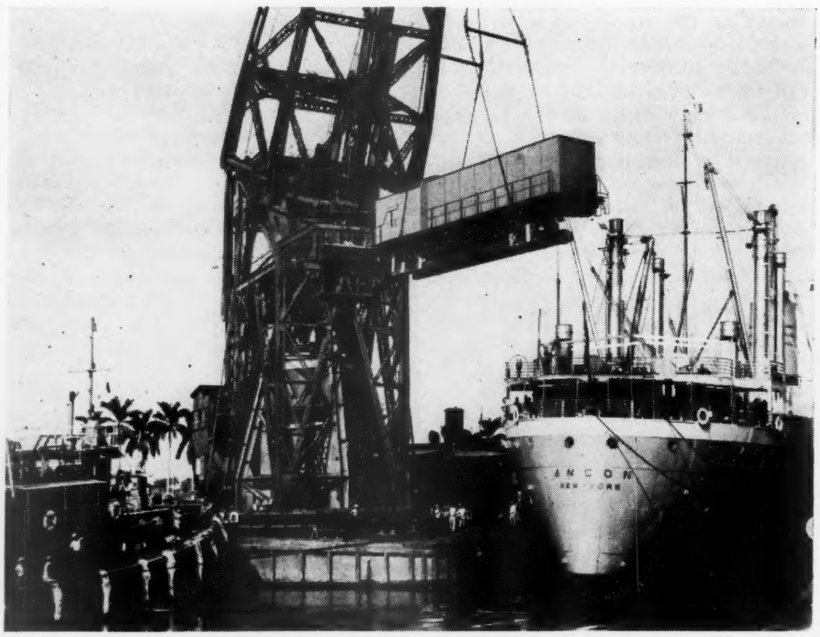
Their net railway operating income in May amounted to $34,473,205 compared with $33,669,786 in May 1951. Those same roads in the first five months of 1952 had net railway operating income of $159,423,863 compared with $126,407,729 in the same period of 1951.

Gross in the Eastern district in the first five months of 1952 totaled $1,916,113,987, an increase of 2.8 per cent compared with the same period of 1951. Operating expenses totaled $1,536,211,828, an increase of 1.5 per cent.

Class I roads in the Southern region in May this year had an estimated net income of $10,000,000 compared with $7,000,000 in May 1951. In the first five months of 1952 their estimated net income was $53,000,000 compared with $42,000,000 in the same period of 1951.

Their net railway operating income in May amounted to $13,681,529 compared with $11,180,347 in May 1951. Those same roads in the first five months of 1952 had net railway operating income of $71,894,950 compared with $62,911,722 in the same period of 1951.

Gross in the Southern region in the first five months of 1952 totaled $643,169,334, an increase of 5.5 per cent compared with the same 1951 period.



A NEW American Locomotive-General Electric diesel locomotive, still enclosed in its packing cases, is hoisted ashore from the S.S. Ancon of the Panama Line in Cristobal, C.Z. It is one of three Alco-G.E. 1,600-hp. road-switchers recently delivered to the Panama Railroad. Operating from Colon on the Atlantic side of the canal to Balboa and Panama City on the Pacific, the railroad runs a distance of 48 miles. Principal traffic is freight from the United States, much of which is unloaded at the railroad's Colon docks. However, the cross-isthmus trip is a "must" on the itinerary of many tourists, and the road runs several passenger trains a day each way to accommodate these and other passengers.

Operating expenses totaled $468,259,823, an increase of 0.8 per cent.

Class I roads in the Western district in May this year had an estimated net income of $25,000,000 compared with $24,000,000 in May 1951. Their estimated net income in the first five months of 1952 was $100,000,000 compared with $106,000,000 in the same period of 1951.

Those same roads in May had net railway operating income amounting to $34,815,520 compared with $31,867,203 in May 1951. Their net railway operating income in the first five months of 1952 amounted to $142,479,373 compared with $139,854,732 in the same period of 1951.

Gross in the Western district in the first five months of 1952 totaled $1,744,930,859, an increase of 2.3 per cent compared with the same period of 1951. Operating expenses totaled $1,348,801,946, an increase of 3 per cent.

D. T. A. Locomotive Study Indicates Need for Higher Production Goals

The latest locomotive-requirements study by the Defense Transport Administration indicates a need for stepped-up production schedules which would contemplate the building of 312 units per month during the 21-month period from next October 1 to July 1, 1954.

For the subsequent 24 months, from July 1, 1954, to July 1, 1956, the study also indicates, the monthly production should be 333 locomotives—if the motive power fleet is to be put on a "full mobilization" basis. Production during the 2½ years from January 1, 1950, through June 30, 1952, averaged about 280 units per month.

The study was made public July 7. It is on the pattern of the study of freight-car requirements which was issued by D.T.A. last April (*Railway Age*, April 14, page 12). A press release accompanying the locomotive study noted that establishment of the production goals does not involve any commitment by the Defense Production Administration to allocate controlled materials that would be required.

The 312-unit monthly program was proposed as a result of findings to the effect that the railroads' ownership of diesel-electrics should total 28,086 units by July 1, 1954. To reach that goal would require the building of 8,948 units during a 30-month period dated from last January 1, the study's figures also showed. Production during this year's first nine months was put at 2,400 units, or 267 per month. So monthly production during the remaining 21 months would have to be on the 312-unit basis.

Traffic forecasts involved in the foregoing are the same as those used in the freight-car study. They contemplate that traffic on July 1, 1954, will be on an annual basis of about 705.8 billion net ton-miles—3.5 per cent above the 1951 level.

The "full-mobilization" estimate is 850 billion net ton-miles. This is the basis that would call for a stepping up of the monthly schedules to 333 units for the two years from July 1, 1954, to July 1, 1956. That would be for the purpose of building the total diesel-electric fleet to 36,075 units, and it would involve the building of 16,937 units during a 4½-year period begun last January 1.

The study assumed that new motive-power units acquired by the railroads will be "mostly" diesels. "Diesel locomotives," it said, "are generally conceded to be more efficient and effective than steam . . . and make possible substantial savings in fuel, materials and manpower."

Teal Leaves D.T.A. for Assignment in Brazil

Jonathan E. Teal, chief of the Way and Structures Section of the Railroad Transport Division of the Defense Transport Administration, has been granted a six-months leave of absence to accept an engineering assignment with the Joint Brazil-United States Commission for Economic Development. As an associate of Gibbs & Hill, Inc., consulting engineers, of New York, Mr. Teal will assist in a program for development of power resources and rehabilitation of the transportation system of Brazil, as part of the "Point Four" program. He will be located in Rio de Janeiro.

Prior to acceptance of his new assignment, Mr. Teal had been detailed by the D.T.A. to act as engineer-in-charge of a study to determine the need for an additional rail crossing of the Potomac river at Washington, D.C. He made this study in conjunction with a special task group of the Committee on Defense Transportation and Storage.

Mr. Teal entered railroad service in 1905 in the engineering department of the Baltimore & Ohio; was with the Missouri Pacific from 1909 to 1911; with the B&O again to 1923, and with the Chesapeake & Ohio from 1923 to 1949, his last position being transportation engineer on the staff of the vice-president and general manager. He was then engaged as a consulting engineer in Richmond, Va., until he joined the D.T.A.

Canadian "Non-ops" Present Demands

A joint negotiating committee representing unions of non-operating employees of Canadian railroads has filed demands for new contracts, including a wage increase of 45 cents an hour, to be effective next September 1. As this issue of *Railway Age* went to press, discussions of the demands were underway between the negotiating com-

MILWAUKEE ROAD DIRECTORS held an "on the spot" board meeting on June 18 following inspection of the recently completed $3 million improvement program at Air Line yard in Milwaukee. A full description of the new yard facilities—which include both automatic switching and retarder speed control—appeared on page 58 of the June 30 *Railway Age*. Leo T. Crowley, chairman (extreme left), presided over the unusual meeting. Seated on Mr. Crowley's left is John P. Kiley, president of the Milwaukee.

mittee and representatives of the Canadian National, the Canadian Pacific, the Toronto, Hamilton & Buffalo and the Ontario Northland.

In addition to the wage increase, the non-operating unions are calling for the union shop and checkoff, an escalator clause providing for a wage increase of one cent an hour for each one point rise in the cost-of-living index above the September 1952 figure, and removal of the so-called emergency clause whereby employees, regardless of the prevailing 40-hour work week, could, in event of a national emergency, be called upon to work additional hours at standard pay rates.

Railroad representatives have said the cost of a 45-cents-an-hour wage increase, which is equivalent to a pay rise of 35 per cent, would total more than $150,000,000 a year for the two principal Canadian railroads. If certain unorganized groups of employees who in the past have received the same treatment as the non-operating groups are included, the cost, it was said, would be about $167,000,000.

I.C.C. Secretary Bartel Will Retire Next Month

William P. Bartel, secretary of the Interstate Commerce Commission since March 1937, will retire on August 31 after more than 46 years of service with the commission. Mr. Bartel was with the National Museum for nearly four years before coming to the commission, so he will have completed 50 years of government service on August 20.

He advised the commission of his decision to retire in a June 23 memorandum to Chairman Alldredge. The commission responded with a June 26 letter commending Mr. Bartel for the service he has rendered in various capacities. The letter was signed by the 10 commissioners who were in office at the time.

"We have been apprised," it said, "of your intention to retire from public service and to hand back to us the official seal of the commission, untarnished and unsullied, which you have kept and officially used for some 15 years. Before closing your public career, extending as it does over a period of half a century, we desire to add our attestation to its genuine accomplishment, to the high ideals with which you have always been actuated, and to the spirit of loyalty and cooperation which you have shown in your work and in your relations to the commission and its staff."

The letter proceeded to review Mr. Bartel's career, saying that, "in a real sense," he had "grown up with the commission as its authority and duties have constantly expanded." The duties and responsibilities of Mr. Bartel's positions "called for the application of varied talents and a tenacity of purpose far above average," the letter continued. In closing, it said:

"We know you are leaving the commission with a feeling that it has also been good to you, and we hope that you may, in the future, experience the full realization of the prediction of Sophocles made more than 23 centuries ago: 'Who labors best, his labors ended, has the sweetest rest.'"

In his memorandum to Chairman Alldredge, Mr. Bartel said he had "no definite plans for the future other than to rest and to do some of the things that Mrs. Bartel and I have been looking forward to."

Mr. Bartel was born January 25, 1886, at LaCrosse, Wis. He was educated in public and private schools;

FOOD WITH A RAILROAD FLAVOR is the specialty of "Whistle Stop No. 1," the first unit of a nationwide chain of "snack" restaurants wherein the decor is "Railroadin" from store front to back kitchen *(Railway Age*, June 23, page 56). Food is brought to the patron's "station" by a model diesel-electric train (above) and served by a "stewardess" who takes "orders" from patrons and relays them to the "engineer" in the kitchen. Large illuminated murals stress scenic beauties of popular travel spots. A delegation of Chicago railroad passenger men from nine eastern and western roads (shown here, below, with "Miss Whistle Stop") were on hand for the grand opening on June 5.

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended July 5 were announced by the Association of American Railroads on July 10 as follows:

	Surplus	Shortage
Plain Box	1,721	3,019
Auto Box	172	0
Total Box	1,893	3,019
Gondola	8,721	242
Hopper	13,768	184
Covered Hopper	28	0
Stock	2,483	0
Flat	11	191
Refrigerator	2,233	0
Other	1,183	4
	30,320	3,640

and at Georgetown University Law School, where he was awarded his LL.B. degree in 1915. Meanwhile, his government service with the National Museum had begun in 1902, and he became associated with the I.C.C. as a clerk in 1906.

From 1910 until 1915, he was assistant chief of a Claims Division which was then part of the commission's organization. Next he served about a year as private secretary to Commissioner Clark. Then he became an examiner and was assigned, in turn, to the offices of Commissioners Clark, Anderson, and Aitchison.

On July 1, 1920, Mr. Bartel was appointed assistant chief examiner, and, on October 16, 1920, he became assistant director of the Bureau of Service. On April 1, 1923, he was promoted to the directorship of that bureau. He remained in that position until he became the commission's secretary on March 16, 1937.

New I.C.C. Appointments Win Senate Approval

The Senate on July 1 unanimously confirmed the appointments of Martin Kelso Elliott, Anthony F. Arpaia and Charles D. Mahaffie to the Interstate Commerce Commission.

As noted in *Railway Age* July 7, page 14, Mr. Elliott and Mr. Arpaia will be new members of the commission. Mr. Mahaffie has been a member since 1930 and his latest appointment is for a new seven-year term.

Harris & Ewing

Martin K. Elliott

Mr. Elliott will replace Commissioner Clyde B. Aitchison, who is retiring after 35 years on the commission. A sketch of Mr. Aitchison's career appeared in *Railway Age* June 23, page 17.

The resignation of Commissioner John L. Rogers created the vacancy to which Mr. Arpaia has been appointed. Mr. Rogers resigned last April because of ill health.

Mr. Arpaia was born December 17, 1897, at New Haven, Conn. He was educated at New Haven, and received his B.A. degree from Yale in 1921. He was graduated from Yale Law School in 1923 and was admitted that year to the Connecticut bar. While in law school he served as editor of the Yale Law Journal.

Admitted to the New York bar in 1924, Mr. Arpaia was associated for two years with the New York City law firm of Chadbourne, Hunt, Jaeckel & Brown. From 1925-1927 he was with the firm of Wirth & Picard in Berlin, Germany, representing American interests in Central and Eastern Europe.

Anthony F. Arpaia

Returning to New Haven, Mr. Arpaia engaged in general law practice from 1927 to 1942. He was a judge of the Town Court of East Haven in 1931-1933. Between 1942 and 1945 he served with the Office of Price Administration in Connecticut, being state director from 1943 to 1945.

Mr. Arpaia joined the Adley Express Company as vice-president and general counsel in 1945. He served with the trucking firm until 1951. Since 1951 he has practiced law at New Haven, specializing in corporate, estate planning and tax law.

Among other things, Mr. Arpaia was a member of the Governor's Reconversion Council of Connecticut, 1944-1946; chairman of the Regional Planning Authority for South Central Connecticut, 1948-1951; director of the New Haven Chamber of Commerce, 1946-1952; vice-chairman, New Haven Charter Revision Committee, 1948-1950; vice-president and director, New Haven Taxpayers Research Council, and chairman of the Metropolitan Advisory Committee of New Haven. He is a member of several groups, including the American Bar Association, American Judicature Society, and the Association of I.C.C. Practitioners.

Mr. Elliott was born February 1, 1908, at Spencer, Ind. He attended schools in Indiana, and received his A.B. degree in 1930 from Depauw University. In 1933 he was graduated from the Harvard Law School.

Admitted to the Indiana bar in 1933, he practiced law for three years with the firm of Elliott, Weyl & Jewett. During a part of this time he served as a law clerk in the U. S. District Court for the Southern District of Indiana. Also during this period he helped compile the Indiana annotations to the American Law Institute's Restatement of the Law, his principal work being the "Restatement of the Law of Conflict of Laws."

Mr. Elliott was with the Travelers Insurance Company, Hartford, Conn., in 1937-1938, but returned to Indianapolis in 1939 to again enter private law practice. At various times during 1939 and 1942, Mr. Elliott was a member of the board of directors of the Lawyers' Association of Indianapolis, and of the Committee on Admissions and the Board of Managers of the Indianapolis Bar Association. In 1941-1942 he was a member of the Board of Election Commissioners of Marion county (Indianapolis), Ind.

When Mr. Elliott and two other members of his law firm entered the Army early in World War II, the firm was enlarged to include, among others, Joseph M. Howard, who subsequently became a judge and is now Executive Assistant of the Democratic National Committee.

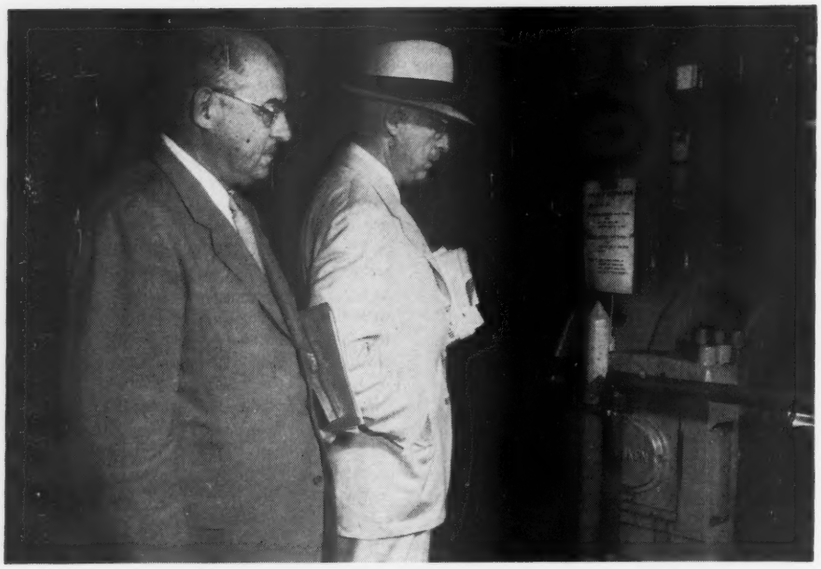
During his Army service from May 1942 until September 1946, Mr. Elliott advanced successively from private to lieutenant colonel in the Judge Advocate General's Department, the Army's legal division.

Clyde B. Aitchison

After the war, in 1947, Mr. Elliott became Deputy Attorney General of Indiana and served as chief counsel for the Indiana Department of State Revenue. In September 1947 he became assistant counsel for the Senate Subcommittee on Privileges and Elections, serving in that capacity until May 31, 1949. Since March 1950 he has engaged in private law practice in Washington, D. C.

Commissioner Mahaffie's new term on the I.C.C. will expire December 31, 1958. He was confirmed by the Senate without opposition. President Truman reappointed him to the commission early this year, but Senate approval was held up by a series of hearings at which Senator Tobey, Republican of New Hampshire, subjected him to a comprehensive examination on commission policies and decisions in railroad reorganization cases.

While the commissioner's reappoint-



DR. MARIANO FERREZ, president of the Companhia Sorocabana de Materiel, of Sao Paulo, Brazil, inspects a railway axle testing machine at the Canton, Ohio, plant of the Timken Roller Bearing Company. With Dr. Ferrez is William E. Umstattd, president of Timken. The organization which Doctor Ferrez heads is a builder and lessor of freight cars. It will equip 20 cars with Timken tapered roller bearings.

ment was being discussed on the floor of the Senate, Senator Bricker, Republican of Ohio, revealed that the nomination "met with the unanimous approval of the (Senate Interstate) committee." He indicated later that Senator Tobey "did not vote either for or against the nomination."

Senator Johnson, Democrat of Colorado and chairman of the committee, did file a report on behalf of Senator Tobey. In this report, Senator Tobey was critical of the I.C.C., saying, among other things, that policies laid down by the Congress affecting railroad financial reorganizations "have been disregarded" by the commission.

"The I.C.C. should reshape its entire thinking and conduct in railroad reorganizations to accord with existing economics and existing legislative and executive policies," the report said.

The phrase "your committee" was used throughout Senator Tobey's report. When the senate was about to pass on Commissioner Mahaffie's nomination, Senator Bricker objected to that wording of the report. He said the report "certainly does not represent the recommendations of the Committee on Interstate and Foreign Commerce," and added that it "represents nothing under the sun but the views of one individual." Senator Johnson concurred and said he assumed responsibility "for not catching that point at the time the report was filed."

Strike Halts Great Lakes Car Ferry Services

A strike of the Great Lakes Licensed Officers Organization—an independent marine union—called at 12:01 a.m. July 4, has halted trans-lake Michigan railroad car ferry services of the Ann Arbor, the Pere Marquette district of the Chesapeake & Ohio and the Grand Trunk—Pennsylvania. The tieup has also affected Detroit river operations of the Wabash and the Chesapeake & Ohio. In both cases freight traffic is being handled via all-rail routes with a minimum of delay.

Railroad car ferry service across the straits of Mackinac has not been affected.

A spokesman for one of the companies told *Railway Age* that the outlook or an immediate settlement was "not good," as the national mediation board, which has been unable to bring about an agreement, does not contemplate creation of an emergency board. The dispute is primarily over wages.

Pullman Ticket Redemption Regulations to Be Changed

Changed regulations for redemption of unused for partly used Pullman tickets will become effective July 20. Only sleeping-accommodation tickets sent for redemption or refund adjustment to the Pullman Company's general passenger agent at Chicago 54 are affected. No change is presently being made in rules for redemption of tickets by ticket agents.

Except for tickets specifically exempted by tariff provisions, the changes specify that tickets for sleeping accommodations not released before departure of the train for which they were sold will not be redeemed. In addition, a refund service charge of 10 per cent of the Pullman rate refundable will be made on sleeping-accommodation tickets redeemed by the general passenger agent. The refund service charge on each such ticket will not be less than 50 cents nor more than $2.

Freight Car Loadings

Loadings of revenue freight in the week ended July 5 totaled 447,396 cars, the Association of American Railroads announced on July 10. This was a decrease of 201,776 cars, or 31.1 per cent, compared with the previous week; a decrease of 140,763 cars, or 23.9 per cent, compared with the corresponding week last year; and a decrease of 106,514 cars, or 19.2 per cent, compared with the equivalent 1950 week.

The A.A.R. said the July 4 holiday, the annual vacation of coal miners and continuation of the strike in the steel industry had reduced loadings in the week ended July 5 to the lowest weekly total since 1934.

Loadings of revenue freight for the week ended June 28 totaled 649,172 cars; the summaries for that week and the preceding week, as compiled by the Car Service Division, A.A.R., follow:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, June 21

District	1952	1951	1950
Eastern	108,766	142,707	143,762
Allegheny	97,383	176,965	165,704
Pocahontas	53,170	66,573	58,908
Southern	120,620	129,484	121,814
Northwestern	68,783	134,456	131,140
Central Western	130,638	124,122	127,452
Southwestern	64,500	58,635	61,191
Total Western Districts	263,921	317,213	319,783
Total All Roads	643,860	832,942	809,971
Commodities:			
Grain and grain products	65,313	45,501	50,768
Livestock	6,291	6,852	7,612
Coal	121,823	154,873	145,306
Coke	4,312	16,854	15,068
Forest products	45,586	48,327	47,446
Ore	10,912	91,994	79,194
Merchandise l.c.l.	68,795	74,637	81,955
Miscellaneous	320,828	393,904	382,622
June 21	643,860	832,942	809,971

For the week ended Saturday, June 28

District	1952	1951	1950
Eastern	109,374	145,236	145,763
Allegheny	99,720	172,795	166,692
Pocahontas	54,261	60,869	57,190
Southern	116,317	125,412	121,585
Northwestern	68,931	133,875	116,542
Central Western	134,056	123,437	111,525
Southwestern	66,513	59,901	64,223
Total Western Districts	269,500	317,213	292,290
Total All Roads	649,172	821,615	783,520
Commodities:			
Grain and grain products	69,989	44,293	48,935
Livestock	5,399	6,567	6,274
Coal	128,418	146,756	144,843
Coke	4,181	17,195	14,817
Forest products	44,404	47,207	45,531
Ore	10,101	90,640	73,042
Merchandise l.c.l.	69,403	74,358	79,769
Miscellaneous	317,277	394,599	370,309
June 28	649,172	821,615	783,520
June 21	643,860	832,942	809,971
June 14	631,043	826,883	805,876
June 7	684,243	813,326	796,041
May 31	697,026	744,655	709,896
Cumulative total 26 weeks	18,536,117	19,918,313	17,884,750

In Canada.—Car loadings for the seven-day period ended June 21 totaled 82,343, compared with 80,780 cars for the previous seven-day period, accord-

ing to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 21, 1952	82,343	29,993
Cumulative Totals:		
June 21, 1952	1,910,213	853,947

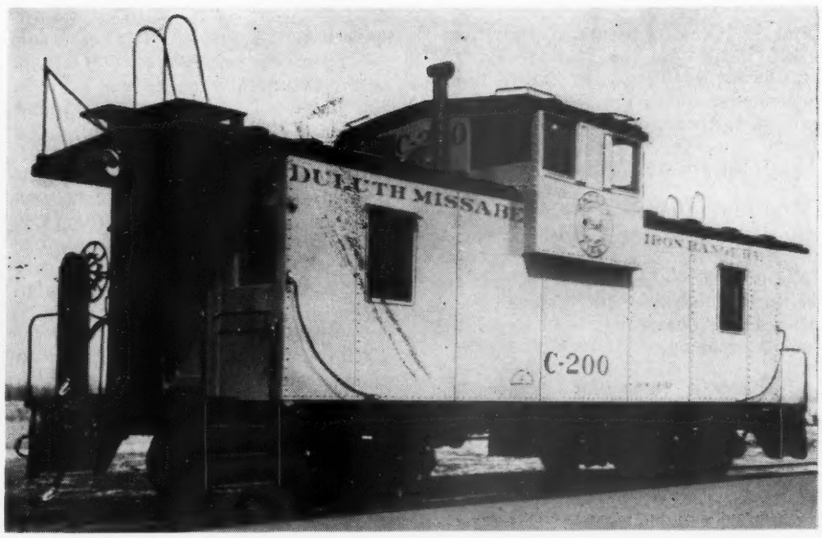
D.T.A. Manpower Division Issues Accident Study

S. L. Newman, director of the Manpower Division, Defense Transport Administration, has issued a study on "Man-Hour Losses Due to Work Accidents." The 19-page study covers all transportation fields over which D.T.A. has responsibility. A.D.T.A. announcement said the study "is intended to outline what has been done and what can be done to prevent costly industrial accidents."

The railroad section of Mr. Newman's report contains figures showing that in 1951 American railroads had 49,000 "disabling work injuries." This figure is an estimate of the Bureau of Labor Statistics, which calculated the railroads lost 9,700,000 man-days last year because of these injuries.

Both in fatal and non-fatal classifications, work accidents on American railroads have been steadily declining during the last decade, except during war or emergency years, the report said. It added, however, that the annual total of killed and injured is still "grim enough to demand further intensive safety efforts."

Additional General News begins on page 90.



SOMETHING NEW—A WIDE-VISION CUPOLA, made its appearance in Chicago on June 26 and 27 when the International Railway Car & Equipment Manufacturing Co., of Buffalo, N.Y., and Kenton, Ohio, displayed this caboose newly built for the Duluth, Missabe & Iron Range. Exhibited with the DM&IR car was a "standard" cupola caboose for the Kansas, Oklahoma & Gulf. Both were en route to their new owners and were in no way specially fitted or finished for the exhibition. The International organization, founded in 1943, has specialized entirely in manufacture of metal cabooses. It produces four basic models, including standard cupola, bay window and wide-vision cupola types, with interior furnishings and fittings optional to requirements of the purchasing road. More than 200 railway officers examined the cabooses at the display.

ORGANIZATIONS

West Coast Supts. to Meet In 'Frisco Aug. 7 and 8

The fourth annual West coast post-convention meeting of the American Association of Railroad Superintendents will be held in San Francisco on August 7 and 8. Details of the meeting will be announced later.

The purpose of the meeting is to consider common operating problems, and to discuss committee reports prepared for the annual meeting of the association held in Chicago last June 4, 5 and 6 (*Railway Age*, June 16, page 68) for the benefit of western members who were unable to attend the Chicago meeting.

Miss Georgia Turpin, of the Western Weighing & Inspection Bureau, St. Louis, former national corresponding secretary of the **Railway Business Women's Association,** was installed as president of the organization on June 22 at the annual convention in Colorado Springs, Colo. Miss Kathryn Whalen of Buffalo, N. Y., past president of the organization and national residence chairman, presided at the installation ceremonies.

The 99th regular meeting of the **Mid-West Shippers Advisory Board** will be held at the Schroeder Hotel, Milwaukee, Wis., on July 16 and 17. Immediately following adjournment of the general session on July 17 members and guests will attend an outdoor barbecue as guests of the Union Refrigerator Transit Lines. The Milwaukee will provide a special train to the URT plant, leaving the Milwaukee's station at 12:15 p.m. and returning to that point upon conclusion of the festivities.

The annual golf outing of the **Eastern Car Foreman's Association** will be held July 17 at the Race Brook Country Club, Orange, Conn.

SUPPLY TRADE

Templeton, Kenly & Co. has elected **Phillip H. McManus,** formerly general sales manager, as vice-president in charge of sales. Mr. McManus, in addition to directing sales, also will travel in far western territory. **William H. Zepp,** a new addition to the staff, will assist Mr. McManus in Illinois, Indiana, Iowa, Kansas, Michigan, Missouri and Wisconsin. **N. L. Montgomery** has been appointed manager of mining sales in the territory including southern Indiana, southern Ohio, Kentucky, Pennsylvania, West Virginia and Virginia. He will be assisted by a new salesman. **Richard S. Bowers. William D. Boldt,** south eastern division sales manager, in Atlanta, has been assigned Arkansas and Louisiana in addition to his former territory of Alabama, Georgia, Florida, Mississippi, Tennessee and the Carolinas, with Virginia reassigned to Mr. Montgomery. **Arthur C. Templeton,** whose headquarters are in Dallas, Tex., will cover Oklahoma and Texas.

The **General Crushed Stone Company** has announced appointment of **W. H. Litteer** as district representative in charge of sales of its Watertown, N.Y., office. Mr. Litteer will continue his duties as the firm's traffic manager from his new office.

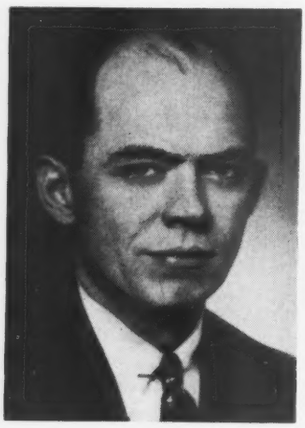
Clayton R. Kielich has joined the engineering department of the railway equipment division of the **Bogue Electric Manufacturing Company** and has been assigned to the post of systems engineer. Mr. Kielich came to Bogue from the Chicago, Milwaukee, St. Paul & Pacific, where he spent the past five years in the telegraph and signal department.

The **Binks Manufacturing Company** has moved its Cleveland offices and warehouse to new and larger quar-

ters at 1241 West Ninth street, Cleveland 13. **B. R. Fulton,** district manager, heads the new office. **H. G. Pankratz** is district engineer. Sales representatives in the Cleveland territory are: **George Sherwood** (Cleveland), **George Mally** (Indianapolis), and **John Homan** (Cincinnati).

Sprague Devices, Inc., has established a complete export department to coordinate the firm's activities in the international field. Export offices are being established in Chicago and **Robert E. Oscar** has been appointed export manager.

Robert G. Brossard has been appointed sales agent in the **American Car & Foundry Co.'s** New York district office. Mr. Brossard, formerly with A.C.F. in Cleveland, will report to



Robert G. Brossard

Thomas C. Ballou, district sales manager. A native of Maplewood, Mo., Mr. Brossard joined A.C.F.'s Cleveland sales office in 1944, handling railroad and miscellaneous sales until his new assignment

The **Standard Pressed Steel Company** has named three additional sales representatives to handle its line of socket screws and all other standard products. **Marshel Moorhouse** has been assigned to the New York City territory. **Walter H. Cunnington** will work out of St. Louis and handle sales in middle Illinois, Missouri, Kansas and parts of Iowa. **James C. Humphries** will have headquarters in Los Angeles and will sell in California, Washington and Oregon. **Francis J. Kinsella,** sales manager in the Detroit territory, has been appointed to the newly created post of regional sales manager in the midwest. His headquarters will continue to be in the Detroit territory offices at 944 Harper avenue. **Daniel F. Hulgrave, Jr.,** with the Standard Pressed Steel sales organization in Detroit since 1949, succeeds Mr. Kinsella as manager of the Detroit territory.

Claude D. Fulk has been appointed superintendent of the railroad department of the **International Correspondence Schools.** Mr. Fulk, who entered railroad service as a messenger on the Southern when he was 13 years old, has been a fireman and engineman on the Chesapeake & Ohio.

Donald G. McGibbon has been appointed assistant to vice-president, purchasing, of the **Pressed Steel Car Company.** He has been succeeded as director of purchasing for the company's Mt. Vernon, Ill., car manufacturing division by **Robert G. Sass.**

George M. Seymour has been appointed manager of all railroad sales for the **Gustin-Bacon Manufacturing Company.** Mr. Seymour succeeds **Fred C. Fuller,** who retired after holding that position for 40 years.

The following appointments in the Air Brake division of **Westinghouse Air Brake Company** have been announced: **C. O. DeWitt,** as assistant manager of the eastern district at New York; **R. B. Morris,** as eastern district engineer at New York: **J. G. Rees,** as representative, western district, at Chicago; and **D. G. Blaine,** also as representative in Chicago.

Warren S. Mann has been appointed manager of the Dixie division of **Armco Drainage & Metal Products, Inc.,** with headquarters in Atlanta, Ga. Mr. Mann, who was named sales manager of the division in 1949, succeeds **Howard See,** who retired on June 26, his 65th birthday.

E. I. du Pont de Nemours & Co. is celebrating its 150th anniversary this year. The anniversary will be observed July 18 in ceremonies at the site of the firm's first mill on Brandywine creek at Wilmington, Del. An audience of nearly 7,000 people, mostly active and retired du Pont employees and members of the du Pont family, will attend.

The **General American Transportation Corporation** has announced appointment of **LeRoy Kramer, Jr.,** as assistant vice-president of its General American-Evans Company division, lessors of the GAEX "damage free" box car. Before joining General American in 1939, Mr. Kramer had been city freight agent of the Illinois Central and then special representative of the general manager of the Belt of Chicago.

David W. Martin has been appointed district sales manager in charge of the Atlanta, Ga., office of the **Youngstown Sheet & Tube Co.** Mr. Martin, a member of the Atlanta sales staff for 23 years, succeeds the late **William W. Ford.**

Keith P. Rindfleisch, Chicago district manager of the **United States Steel Supply division** of **U.S St.eel,** has been appointed sales vice-president. **H. P. Kibbey,** assistant district manager at Chicago, succeeds Mr. Rindfleisch.

Thomas B. Wood, Jr., has joined the **Ellcon Company** as a sales assistant. Mr. Wood will engage in sales to railroads and transit companies.

Joseph R. Lair, district sales manager of the Indiana-Michigan territory of the **Universal Atlas Cement Company** (a U.S. Steel subsidiary), has retired and is succeeded by **Auwell Fogarty,** assistant district sales manager.

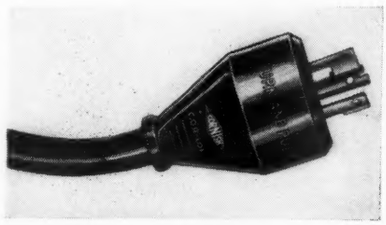
OBITUARY

F. E. Schaumburg, railroad representative in the sales development division of the Caterpillar Tractor Company, who died at his home in Peoria, Ill., on June 26. Mr. Schaumburg had served with the Northern Pacific, the Chicago Great Western and the Chicago & North Western before joining Caterpillar in 1944.

CONSTRUCTION

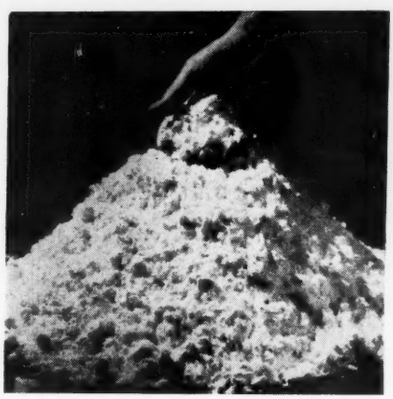
Duluth, South Shore & Atlantic.—Division 4 of the I.C.C. has authorized this road to construct and operate a 14-mile line between Bergland, Mich., and White Pine. Estimated cost of the construction project is $642,884. The line will serve copper mining operations of the White Pine Copper Company. Traffic estimates indicate about 665,100 tons of freight will be handled during the first five years. The copper company will pay all initial costs of construction, and the road will subsequently purchase the line on an installment basis.

Toronto, Hamilton & Buffalo.—A two-span, longitudinal beam steel deck plate bridge to accommodate three tracks over Aberdeen avenue in Hamilton, Ont., has been ordered from the Hamilton Bridge Company at an approximate cost of $308,000. Erection is scheduled to be completed before the end of 1952. The new bridge will replace a single track, through girder and trough floor structure built in 1905.



Locking Plug For Portable Extensions

Corlock is the name given to a heavy-duty locking plug now being produced by Cornish Wire Company, New York 7. A waterproof, shock-resistant jointure of the plug and wire is achieved by molded rubber construction. The plug is approved by Underwriters' Laboratories for 20 amp. at 250 volts and 10 amp. at 575 volts. It is available in flexible cord sizes as follows: 18-3 and 16-3 SJ; 18-3, 16-3, 14-3 and 12-3 in S, SO and SJO hard-service coverings. A twist upon plugging-in establishes sure connection that stays unbroken as long as desired.



Asbestos Fiber Tank Car Sealer

Liquids such as bulk wines or fuel oil often are shipped for long distances in tank cars. In the past, when leaks developed, the only way to prevent serious loss was to transfer the contents to another tank or car.

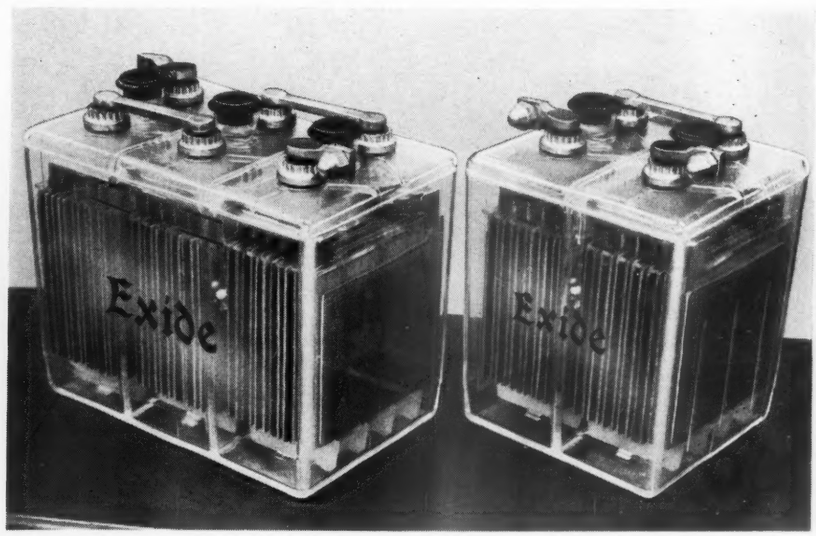
It has been discovered that a small amount of asbestos fiber, added to the liquid, will stop these pin holes until the tank can get through to its destination and be overhauled. This asbestos fiber is mined and processed by the Hercules Filter Corporation, Paterson, N. J. For best results, a small amount of the liquid in the tank is drawn off into a pail. Into this, the asbestos is mixed to form a slurry, which is then poured into the tank to assure faster dispersion and plugging of the leak.

The Association of American Railroads has advised its members of this use, explaining that when put into the liquid in a tank car, the asbestos filaments follow any flow or current present in the tank. The currents carry it to the leak, where it mats across the crevice to form a plug.

Diaphragm Stayrod Washers

On modern cars, vestibule diaphragms are sometimes supported by stayrods, one on each side of the diaphragm. The upper end of the stayrod is attached to a bracket fastened to the end of the car; the lower end fastened to a bracket of the diaphragm.

Washers, available from Fabreeka Products Company, Boston 10, Mass., can be utilized on the stayrods on both ends of the bracket to provide necessary resiliency, reduce noise and keep the bolts tight. These washers have a total thickness of at least 1 in. to allow for the arc through which the lower end of the stayrod moves with the buffer plate.



Batteries for Stationary Application

A new series of storage batteries of two-cell and three-cell construction for stationary applications offering advantages in space and weight saving, maintenance and improved dependability, have been introduced by the Electric Storage Battery Company, Philadelphia.

Designated as Exide Type PLX, the batteries are in transparent polystyrene plastic cases designed to show the level of the electrolyte and the approximate state of charge.

Markings on the transparent case indicate the recommended high and low electrolyte levels. Built into each outer cell is a chamber in which a red, a white, and a blue ball float in electrolyte when the battery is fully charged. When the battery is 10 per cent discharged the blue ball sinks. When it is one-third discharged the white ball sinks, and when two-thirds discharged the red ball goes down.

An improved safety factor is achieved by an automatic venting device of clear polystyrene built into each cell to prevent excessive gas accumulation.

Applications for which the new Exide PLX Series is recommended include electric switchgear, communications, emergency lighting and power, laboratories, railway signaling equipment, rural electrification, and alarm systems.

Exide's choice of clear polystyrene is the result of years of experience with this versatile material.

The two-cell PLX batteries have a 50-amp.-hr. capacity at the eight-hour rate, while the three-cell units have a 100-amp.-hr. capacity at the same rate. They may be used in combinations to supply any desired range of voltages.

In construction, the clear plastic cover is firmly cemented to the case. Positive plates are flanked by spun glass Vitrex retainers, against which are placed plastic plate protectors.

The new batteries range from $4\frac{1}{2}$ in. to $11\frac{3}{8}$ in. in length. Width and height have been standardized at 7-5/16 in. by $10\frac{3}{8}$ in. in the four available sizes.

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A HIGH-QUALITY LUBE FOR REAL PROTECTION—Esso offers "tailor-made" diesel locomotive lubricating oil (Diol RD) developed through years of field testing and research by both engine designers and Esso scientists to meet needs of railroad diesels. High-quality Esso Diol RD gives dependable lubrication protection.

BACKED BY CONSTANT RESEARCH—continuing tests in the lab and on the road make sure that Diol RD keeps pace with progress and latest developments in railroad diesels.

BACKED BY CONSTANT FOLLOW-UP—on-the-job check-ups by Esso Sales Engineers watch the dependable performance of Esso Railroad Fuels and Lubricants. Be sure to call on Esso for any railroad fuel or lubricating problem.

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WHOSE FAULT IS IT THAT REGULATION IS FAULTY?

The appointment of—not one but two—relatively unknown men to the Interstate Commerce Commission should serve to shake the "customers" of this agency out of the complacency with which they have tolerated the gradual but incessant weakening of its stature and standing. Let it be quickly added that this observation is made without prejudice to the new nominees—who may turn out to be able men. But, back in the twenties or earlier, is it likely that men with comparatively little experience or acquaintance in transportation could have successfully aspired to such appointments? Isn't it a fact that, in those days, these positions ranked so high, relatively, both in prestige and salary, that many more highly acceptable candidates were available than there were vacancies?

"Something More than Money . . ."

A prominent railroad lawyer has expressed the opinion, privately, that merely increasing the salaries of the commissioners would not, of itself, make these appointments, once more, highly attractive to competent and experienced state regulatory officials, jurists, commerce lawyers and transportation economists. Something more than money—not only for commissioners, but their assistants—is needed, in the opinion of this learned observer. Probably he is right, but more money is certainly *one of* the requirements. What are the others?

A question that should be settled at the outset is whether the I.C.C.'s "customers" want it to exhibit high ability or not. There are some all-out opponents of government intervention in business who—apparently without thinking the situation through—seem to believe that no regulation is good regulation, and the sooner the regulators are discredited, the better. Those who hold to this opinion fail to consider what the probable alternative to regulation by "independent commission" is. In all likelihood, this alternative is not complete freedom for the "customers" of the regulatory agencies, but the transfer of regulation to political regulators in the executive department of government.

It is a significant coincidence that friends of a constantly stronger executive department—i.e., partisans of "big government"—are even more unfriendly toward the independence and prestige of such agencies as the I.C.C. than are any of the "customers" of these agencies. Those who are tempted to cheer at any difficulties the regulators get into would do well to note that what they are cheering is an item high on the priority program of the "big government" advocates.

Really competent regulation would not be over-regulation. Competent legislation for transportation regulation would prescribe a degree of governmental control which (1) would go only just far enough to protect the public interest and no farther, and (2) would provide a simple regulatory mechanism, not beyond the capacity of men of reasonable intelligence to direct. If such regulation—carefully limited so as not to go beyond demonstrable need or workable limits—were prescribed by law, then intelligent and self-disciplined regulators would still be needed to give effect to the provisions of the law. But there is very little that even the best of administrators can do with a law which no longer corresponds to the realities of the situation it aims at. For example, in the latter part of the prohibition regime, nobody competent could be found to supervise prohibition enforcement, because there were hardly any citizens left who wanted prohibition to succeed. The law was an anachronism which no agency could enforce.

The first step, then—in getting the prestige of the I.C.C. back to the point where competent and constructive regulation will be assured by the caliber of men attracted to I.C.C. appointment—is to amend the regulatory law and "streamline" it, to fit conditions in transportation as they are in 1952, instead of as they were in 1912. Whose job is it to get a 1952 regulatory law to fit 1952 conditions? Obviously the initial re-

sponsibility lies with all the branches of the transportation industry and its customers. The present Interstate Commerce Act, and other statutes which control transportation, were not the handiwork of politicians working in a vacuum. Rather, these statutes were the resultants of political activity on the part of transportation interests and their customers, especially the latter.

There is a miasma of futility hanging over the I.C.C. today, which must greatly encourage the enemies of limited regulation by "independent commission." The primary cause for this condition is that the various segments of the transportation industry—including shippers and commerce lawyers—have not yet shown sufficient statesmanship, or put in the skull practice, necessary to propose a thorough revision of the Interstate Commerce Act and other transportation statutes, to bring the law into conformity with present conditions in transportation.

Industry Must Pave Way

This responsibility cannot be evaded by the transportation industry and its customers, and sloughed off onto Congress, the White House, or the regulatory agencies. Experience with the Bulwinkle Act demonstrates that transportation legislation which the transportation industry wants, and for which it is able to advance sound arguments, can be obtained from Congress, whether the executive department approves or not.

On the other hand, Congress certainly cannot be expected to take the initiative and legislate wisely with respect to transportation, so long as the transportation industry itself is unable to suggest and support a reasonable, modern and comprehensive program.

This paper agrees with its learned friend who doesn't believe that higher salaries alone are going to reconstitute the I.C.C. in the position of esteem it ought to occupy—as a "back-fire" to minimize the extension of "big government" by the executive branch. Instead, the first requirement in reconstructing and strengthening this tribunal is a "streamlined" statute which will constrict regulation within manageable and socially desirable limits. The proposal for such a statute should come from the transportation industry itself—and should include provisions for adequate staffing and compensation of the regulatory body. Indeed, who else is there except the transportation industry (including its patrons) who *could properly* make such a proposal? If the suppliers and users of transportation do not know what degree of governmental supervision they require for their mutual protection, who does know? The so-called Justice Department, perhaps?

There are able and devoted men from the different branches of the transportation industry who are giving intensive study and discussion to this engrossing and important problem. Their labors deserve the sympathetic interest and assistance of all suppliers and purchasers of transportation service.

PRIVATE FREIGHT CARS ARE TRAFFIC BUILDERS

According to the American Railway Car Institute, there were 262,983 private freight cars in the United States in 1950—roughly 13 per cent of the total ownership of 2,032,965 cars and including 141,601 tank cars, 108,134 refrigerator cars and 13,248 cars of other types.

The contribution privately owned freight cars make to rail transportation and shipper service was strongly emphasized at a recent sectional meeting of car maintenance men, the principal speaker saying: "There was a time when private cars did not get as good a break as they do now, but cars of private ownership have developed a volume of traffic for the railroads which is most astonishing. Millions of carloads of special commodities are shipped annually in cars of many different types, built especially for such service. The owners try to keep these cars in good condition and do make heavy repairs almost exclusively, but running repairs while in service are made by the railroads."

The magnitude of the heavy repair job on this equipment is indicated by the fact that one private car company has 37 repair shops throughout the country, for the maintenance of 58,500 cars. Of this ownership, 46,000 are tank cars of several hundred different sizes and types with capacities from 4,000 to 12,500 gallons, some designed for atmospheric pressure, others for high pressures and some with two or more compartments per car. Many are lined with rubber, lead, stainless steel, nickel or other material, either for protecting the product or resisting corrosives and protecting the cars.

Originally tank cars were designed for handling petroleum and its products, but the continued large shipments of these commodities are now only a fraction of the usage for other materials. For example, all sorts of animal and vegetable oils and fats required for foods, paints and chemical industries are representative of a broad list of liquid products for shipment too numerous to be elaborated on here.

Tank cars are used not only for multitudinous products of the oil-refineries, but by steel plants, food plants and manufacturers of many chemical products. Another unusual service is the use for wine shipments of several hundred tank cars with six or seven compartments per car. These cars have a special lining neutral to the commodity and each car transports several brands of wine from California to points of consumption in the east. Another important class of service of private-car company equipment is to the Army and Navy, in handling the tremendous amount of material going into war products and materials required for military purposes.

It is a good thing for the railroads that so much independent initiative and capital expenditure are being devoted to the attraction of traffic to the rails, and making it advantageous to shippers for them to keep it there —which is the function of the specialized freight car.

"You wouldn't ask your guests to ride in a 40-year-old auto. Yet that is about what we are asking many of our passengers to do. No one can expect today's passengers to ride in equipment originated 40, 30, 20—or even 10—years ago. We have some good cars, but we need more." Above, a Boston-Cape Cod commuter train.

F. C. Dumaine, Jr., says . . .

"TRAINS Make Money"

A description of some of the managerial techniques introduced to make the New Haven "a self-supporting, economic property"

Managerial methods used by the Dumaine interests to build the New Haven into a healthier, financially more successful property include a variety of new and old ideas:

- Reduced overhead expense
- Improved managerial efficiency
- Reduced operating expenses through extensive property improvements
- More intensive use of vital facilities
- Liquidation of land and other assets not needed for actual operation of the railroad
- Reduced fixed charges through purchase of bonds
- Improved revenues from better service—and more of it
- Concerted attack on expenses at terminals—small and large
- Reduced station expenses

These goals have been "tailored" to meet the particular problems presented by the New Haven's extensive network of short terminal lines compacted within the limited geographical area of southern New England. The railroad—which has been frequently described as "one big, overgrown terminal"—does not lend itself readily to the rehabilitation methods used successfully in other parts of the country. Branch lines have already been pruned just about as far as possible. The railroad has made every effort to develop large volume, longer haul freight traffic by building its longest lines—the 278-mile line from Maybrook via New Haven to Boston and the 246-mile line from Jersey City to New Haven and Boston—into heavy duty routes, backed with intensive solicitation and good service.

But these measures were not enough.

Unsatisfied New Englander

The late Frederic C. Dumaine—an influential man in New England financial and industrial circles for 70 years—first became a director of the New Haven in 1923, and served on the board more or less continuously until his death in May 1951, at the age of 85. Following reorganization of the road, and its emergence from

"I believe our recent additions and improvements to the Shore Line passenger service have enabled us to obtain passengers being carried by other means of transportation."

Frederic C. Dumaine, Jr., (right) talking it over on a recent inspection trip.

bankruptcy in 1947, Mr. Dumaine, together with a group of other New Englanders, acquired stock control of the railroad. In August 1948, he was elected chairman of its board of directors.

Today, his ideas with respect to the management of the railroad are being carried forward by his eldest son, Frederic C. Dumaine, Jr., who succeeded his father as chairman of the board and president. The son says of those ideas: "My father was not happy with the management of the road. He had an ambition to bring its ownership back to New England. And he was confident that the managerial methods he had developed with great success in other enterprises could save a railroad."

Mr. Dumaine, Jr., describes his program as one designed to make the road "a wholly self-sufficient economic property." He explains, "I believe this railroad can live within its income. By that I mean meet all its obligations—including dividends to its stockholders—as well as carrying on continuing and necessary property improvements."

Modernizing Operating Conditions

The New Haven's chief deems it imperative that operating practices in all departments be modernized, with a view to obtaining more economical performance, and better service for patrons. "Proper facilities and service are of paramount importance in attracting traffic to the rails. As a railroad, you must offer your customer some incentive for giving you his business. The New Haven lacks many of the facilities necessary to give proper service. We propose to remedy that situation."

Toward that end an adjustable program has been mapped out, covering a number of years for its accomplishment, entailing heavy capital expenditures. It is one which, as the annual report to stockholders puts

This diesel rail-bus was developed by the Mack Motor Truck Company especially for branch line rail service. One of its features is a built-in heater so arranged that the rail-bus can be locked and left unattended overnight —even in the dead of winter. Though now single-ended, plans are being made for converting it to a two-ended car that can operate without being turned.

it, "in the best judgment of the management may be carried out if there is no major change in economic conditions." Although the execution of the program may curtail company earnings temporarily, it is considered to be "in the best interest of the stockholders to put the property in first class condition, provide proper equipment and create a cooperative, efficient working organization."

This program contemplates modernizing, simplifying and improving yards, stations and terminals; improving signaling, including CTC on certain single-track secondary lines; purchasing new rolling stock; and up-grading track and right-of-way (heavier rail, stone ballast, reduced curvature and easier grades).

The Cost of Labor

Recognizing that labor represents the largest single *controllable* expense, considerable attention has been devoted to the problem of improving productivity with an efficient working organization. "We have had a difficult personnel problem," Mr. Dumaine explains, "in that the payrolls were heavily loaded when we came in. Our first job was to get rid of those who were not performing essential service and who we believe were not needed—eliminate duplication of effort."

A new and simplified organization has been developed in order to reduce the "cost of management" and to improve its effectiveness. Active control of the railroad rests in a "senior executive committee" appointed by the president and acting under the direction of the board of directors. This committee meets regularly every week —and frequently more often—to consider the problems confronting the railroad and to map the approach that will be used in meeting them. Membership of this committee consists of four men representing each of the major organizational functions. All departmental heads report to this committee, and, through it, to the president. The work of this "senior executive committee" has been implemented by moving actual authority and responsibility down through the organization to the supervisory positions nearest the actual physical job performed.

Sale of passenger station sites in central "downtown" locations has enabled the New Haven to reduce expenses and gain capital for needed improvements. This is the new Hingham (Mass.) passenger station, incorporated as part of a commercial real estate development. A platform extends the length of the building in the rear.

To get all departments working together even more, a kind of "junior executive committee" is now in process of formation. Expected eventually to number around 30 men, this group will have no formal organizational function. It will have a representative from every department—though some departments, which encompass two or more functions (as for example, both locomotive and car maintenance and repair), will have two or more representatives. Members of this "junior committee" will form into subcommittees—with membership determined by the problem at hand—to study particular problems and make suggestions and recommendations to the "senior executive committee."

Continuous job evaluations are made for the purpose of uncovering work which might be simplified or eliminated altogether. In this way much nonessential "paper work" has been brought to light and discontinued, and ways have been found for effecting substantial simplification of much that remains.

"We hear a lot of talk about John L. Lewis," Mr. Dumaine likes to point out, "and his miners' portal-to-portal pay. We have had portal-to-portal pay in the railroad business for years—even longer than the miners. And it grossly inflates the cost of almost everything a railroad does. Take, for example, the painting of the North Falmouth station on Cape Cod. The maintenance department said it would cost us about $2,500 to paint

"Discontinuing trains is no complete solution because that cuts out revenues. It's terminal expenses that are the big burden." (Hartford classification yard.)

"I want to run as many trains as we can cram onto New Haven tracks. The more trains we run, the lower our unit overhead costs."

this building—about the size of a small house—because of the cost of transporting the painters to and from Boston each day. Yet a local contractor was willing to do the work for $600."

Stations and Terminals

The terminal character of the New Haven, President Dumaine says, poses special difficulties. "Terminals are the big burden, big terminals and little terminals, all over the railroad. In 1951 these terminals consumed upwards of $8,000,000, and produced not one cent in operating revenue. A mere 10 per cent reduction in this terminal cost would have a large effect on company earnings. It is, therefore, a subject which is receiving a tremendous amount of our attention."

The New Haven has not discovered the answer to all of its terminal problems, but is hacking away. Complete dieselization which was accomplished last March 31, has made possible many economies—particularly at small terminals at the end of branch lines.

Final completion of the reorganization of the Boston Terminal Company (South Station) and its sale to the New Haven and the New York Central is expected to permit further economies.

One means employed by the Dumaine management for reducing passenger station expense is the sale of land and station buildings—particularly those in desirable "center of town" locations—with the provision that the purchaser shall furnish adequate station facilities for railroad use.

Although no specific plans have yet been completed—other than for the Boston Market Terminal to be built on New Haven land—the railroad hopes to work out an arrangement whereby it can be relieved of ownership and maintenance costs of some of its *freight* stations, the location of which would make them desirable for other businesses.

Freight yards and terminals are being studied to determine where and how their operations might be simplified—and, if possible, the size of the installation reduced without affecting service adversely. Although this study is not yet complete, advance reports indicate that recommendations for suggested simplifications and changes will be forthcoming which will effectively reduce costs in several large freight terminals.

The road recognizes the fact that there is a point beyond which terminal expenses cannot be reduced without harming service. However, as Mr. Dumaine points out, "*costs can be reduced further by increasing the use of any given facility, thereby making possible a greater division of its expense.*" Therefore, new services which are self-supporting are being introduced wherever possible.

All operating terminals are being studied to determine where consolidation or redesign might reduce operating and overhead expenses. For example, a new terminal layout at Hyannis, which will relocate the enginehouse, the passenger station and the freight yard and station has been approved, and is expected to result in substantially lowered costs.

More Trains

Mr. Dumaine tells almost everyone he meets:

"You have heard that passenger trains lose money, and therefore, every railroad should seek to reduce its passenger service as much as possible. This railroad has many and serious problems. But discontinuing passenger trains is no complete solution because that cuts out revenue. Without trains, how can a railroad earn any revenue? It's terminal expenses — the sum total of all terminals, big and little, that are the big burden."

"I want to run just as many trains as we can cram on to New Haven tracks," Mr. Dumaine continues. "The more trains run, the lower the unit overhead costs, and the better the opportunity to show a profit."

"The more passenger service this railroad can run, the better. You will notice the New Haven is adding passenger trains all the time. In the last timetable, with the advent of daylight saving time and the arrival of the new RDC self-propelled 'Shoreliner' cars, we added over 300 train-miles a day of new passenger services. We have been putting on passenger trains whenever and wherever the opportunity offered. *And every one of them has helped improve our net position.*"

A few very lightly patronized trains have been discontinued, but the general trend remains predominantly in the direction of increased mileage and increased utilization of crews and equipment. Added service would be in territories and at times of the day when there is promise of sufficient additional traffic to justify operations.

Mr. Dumaine comments further, "I believe our recent additions and improvements in the Shore Line Boston-New York passenger service have enabled us to obtain passengers being carried by other means of transportation."

Insofar as possible, earnings are being plowed back into the property in an effort to eliminate all deferred

One of the last steam trains in service on the New Haven. All steam power was replaced by diesels on March 31. The use of diesels has permitted many economies.

maintenance. "Visiting firemen" from all over the country have repeatedly observed that the property has "almost never" been in better physical shape. It is the management's intention to institute a program of "preventative maintenance" designed to uncover mechanical failures before they reach the troublesome stage. It is anticipated that such a program, if diligently sustained, will result in lower annual maintenance costs.

Heavier rail (132 lb.) is being laid on the Shore and the Springfield lines as rapidly as steel can be obtained. This is making heavier relay rail available for many of the secondary lines. In turn the secondary main lines—such as between Boston and Buzzards Bay-Hyannis, between South Norwalk and Pittsfield, and between Boston and Waterbury—are being ballasted with trap rock. All current maintenance work on curves on the main lines is being done with a view to eventual reduction of the curvature. In this way it is hoped that a number of curves can be eased at a relatively modest capital expenditure.

The New Haven always had, and continues to favor, ownership of a high percentage of new equipment as a method of controlling costs. The possibilities of acquiring additional passenger and freight equipment, as well as more motive power, are constantly being reviewed in terms of better service and lower costs. At the moment consideration is being given to the purchase of electric locomotives and electric multiple-unit passenger cars to replace 30- and 40-year old equipment that has become expensive to operate and maintain.

Surplus Real Estate

"This property has many outside interests," F. C. Dumaine, Jr., explains. "Take real estate. We have a lot of it, but most of it is old stuff which doesn't have a chance in the world of carrying its tax burden. Yet it can be useful to somebody. Last year alone we sold 338 parcels, grossing $3,047,000, and obtained savings of $78,000 a year in real estate taxes. The proceeds from these sales are being used to reduce the funded debt and to finance needed capital improvements."

Ferreting out surplus real estate is the job of a special committee consisting of representatives of all departments and headed by the real estate department. This group is currently examining *all* real estate owned or controlled by the railroad. This examination — which is being conducted with painstaking care — has uncovered numerous "forgotten" parcels. Each parcel of land is examined to determine its present use — if any — in the daily operation of the railroad, and its potential future use. All parcels not essential to the daily operation of the railroad, and of questionable future value, are being sold. It was this committee which recommended rearrangement of office space in New Haven, so as to encompass the whole staff in the road's modern headquarters building, permitting discontinuance of rented space, and releasing the former general office building for sale to the Knights of Columbus.

Similarly, parcels which are being used by the railroad, but which would also have superior real estate value for commercial use, are being studied to determine whether the railroad could advantageously transfer operations to less valuable property in order to vacate them and place them on the market.

Thus was born the New Haven's program for selling passenger stations for commercial development, retaining perpetual running rights for necessary station facilities. So far, six stations have been sold, and sales contracts have been signed for nine more — and the real estate department has hopes of "moving" many more. Under this arrangement the purchaser is obligated to furnish—at his own expense—an agreed-upon area in the new or converted building for use by the railroad as a passenger station so long as railroad passenger service is operated. The purchaser's plans, insofar as they concern the railroad facilities, must be approved by the railroad before construction may begin. The railroad pays no rent, receiving its leasehold as consideration for the lower price at which the parcel is sold.

This arrangement has the double advantage of reducing operating expenses and producing funds which can be used to finance essential capital improvements.

The same real estate committee now has its eye on the valuable industrial and commercial land occupied by yards and freight terminals. This is being studied to see whether some of this land can be vacated by means of more efficient layouts or by moving operations to less valuable locations.

Another activity of this committee consists of careful examination of all railroad-operated or controlled real estate operations to determine whether the property is being well managed. This includes digging out ways and means for finding more tenants, or increasing the areas available for rental. A current activity along this line is an attempt to interest outsiders in renting office space in the South Station office building.

Bus and Truck Subsidiaries

The New Haven owns outright four local bus companies operating in its area—including the Berkshire Street Railway, the Connecticut Company, the County Transportation Company, and the New England Transportation Company. The latter also conducts extensive trucking operations. These bus operations are almost entirely transit-type, serving congested areas. Some of these are held as investments. Others have been used to "protect" the railroad from the necessity of operating certain local services.

When queried about the future value of these motor properties to the New Haven, Mr. Dumaine commented: "I believe each of these companies should stand on its own feet, and that the railroad should cease fostering and protecting them. That is exactly what we are doing. And those companies which do not make good as investments, I believe the board of directors will consider selling. One result of this policy is that we are forcing the railroad to run as a *railroad*, paying more attention to its own knitting."

A clean-cut appearance is presented by the new shop at the Soo Line's Shoreham yard in Minneapolis. It will handle all of the work formerly performed on nine outdoor rip tracks.

The heavy-repair bay is 63 ft. wide by 120 ft. long and will accommodate eight cars. Tracks in both bays are embedded in the concrete floor and have jacking pads along their sides.

Looking toward the light-repair bay. The railroad expects to turn out from 60 to 70 cars a day from this section. Each bay is served by an overhead crane having a lifting height of 23 ft.

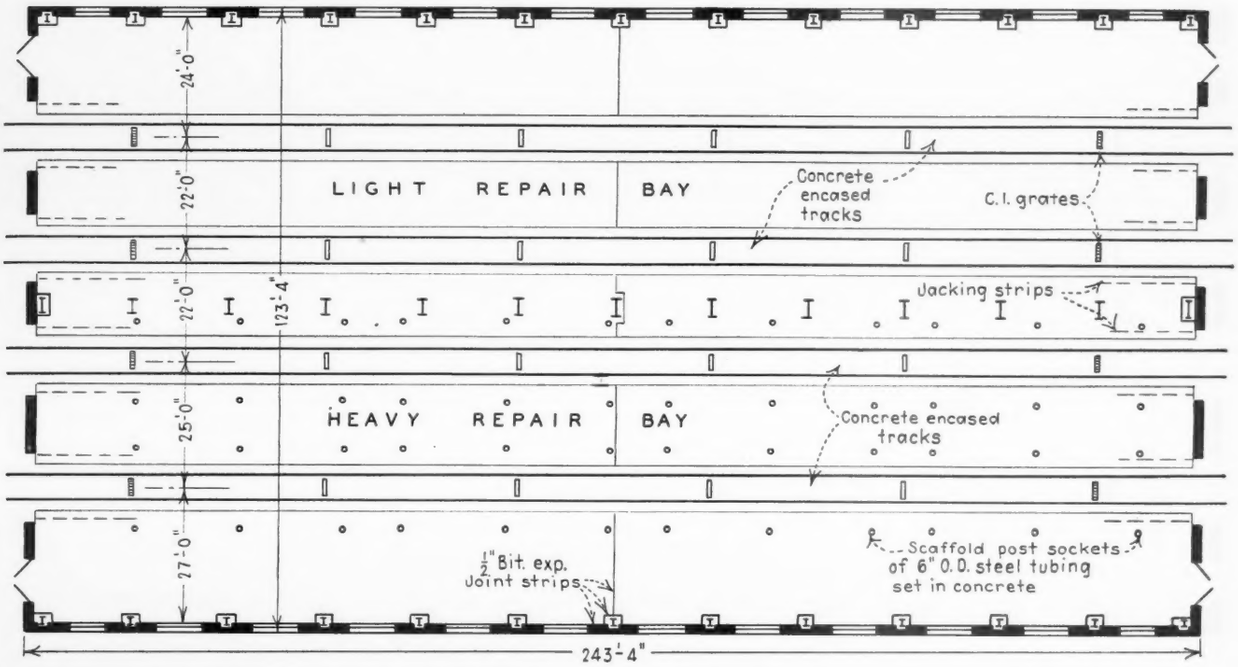
Cars are set out by switch engines on the receiving ends of the repair tracks and are pulled into the shop by a Trackmobile. When repairs have been completed the cars are pushed out to the leaving ends of the tracks.

Soo Line Moves Rip Tracks Indoors

Enclosed, heated building for making repairs to freight cars is expected to result in greater efficiency

Because men work better when their work is well lighted, they have the proper tools and repair parts immediately available, and are protected from inclement weather, the Soo Line has just completed a new freight car repair shop at a cost of $543,000 at its Shoreham yard at Minneapolis, Minn., to bring rip-track work indoors. This building, 123 ft. by 243 ft. in plan, contains four tracks on which all of the freight-car repair work, formerly carried out at this point on nine outdoor rip tracks, will be done under cover more expeditiously.

The structure is a brick and steel-frame building with a clear interior width of 120 ft. except for an intermediate line of columns extending lengthwise with the building which divides the interior into two bays. The outer walls are of clay brick on their exteriors and of sand-lime brick on their interiors, with large panels of glass block between sidewall columns and in the upper portions of the end walls over Kinnear motor-operated rolling steel doors. The roof has an insulated Robertson steel deck, and the bottom of the roof trusses affords a vertical clearance of 31.5 ft. The floor is of concrete, 6 in. thick, and is mesh reinforced. The tracks are em-



The generous width of working area in the building is evident from this floor plan. Removable scaffolding is used in the heavy-repair section to permit this section to be cleared whenever an unusual number of cars require light repairs.

bedded in the concrete floor, with jacking pads along the sides. Drains are provided at 40-ft. intervals along the centers of the tracks.

One of the bays has an inside width of 63 ft. and the other 57 ft. Each bay contains two through tracks, each capable of holding four cars, and the track centers are spaced to provide ample working space between cars on adjacent tracks. Hence repair work can proceed on 16 cars simultaneously. The narrower bay is used for light repair work to such parts as wheels, couplers, brake beams, hangers, doors, floors, inside lining, and roofs as well as the cleaning of air brakes and the repacking of journal boxes.

The wider bay is to be used for the heavier repairs such as the general overhauling of cars and the complete rebuilding of the car superstructures. Along the tracks in the heavy-repair section, steel sockets have been embedded in the concrete floor so that tubular scaffolding can be erected with working platforms of expanded metal for expediting roof and siding work. In the event that an unusual number of cars requiring light repairs must be handled, the scaffolding may be removed to facilitate the use of the heavy-repair section for making light repairs. This flexibility inherent in being able to increase or decrease either the light or heavy repair work at will also assists in maintaining an all-year-round stabilization of forces.

In general, one of the two tracks in the light-repair section will be used for loaded cars and the other for empties so that, if necessary, work can be concentrated on the loads or empties as desired. Each bay has a 25-ton Whiting overhead crane which travels the full length of the building. The hook of each of these cranes has a lifting height of 23 ft. which enables trucks and other materials to be passed over standing cars. Also available in each bay is a truck-repair rack, about 50 ft. long, having rails elevated on pedestals 21 in. above the floor level, where trucks can be taken for wheel changeouts or other repairs. Each rack is served by a swinging jib crane, equipped with an electric hoist.

Working conditions in the shop are greatly improved as compared with those formerly obtaining outdoors where temperatures drop as low as 30 deg. below zero and snow and ice hampers the work. Lighting in the shop has been carefully planned. Augmenting the daylight entering through the glass-block panels are two lines of medium-intensity incandescent lights along each bay at the bottom-of-truss level and another line under the crane supports along the intermediate line of columns. The shop is heated by three lines of overhead blast heaters which are controlled by thermostats at the working level. An employee's wash and locker room is located in a building adjunct located near the southwest corner.

Service lines with suitably spaced outlets extend along the walls and also along the intermediate line of columns. These include oxygen, acetylene, compressed air, and water, and each line, together with air vent pipes for the acetylene lines, is painted a distinctive color. Car parts are conveniently available in the shop on material racks.

The through tracks have sufficient length outside the building to allow considerable car storage space. Switching crews bring the cars to be repaired to the receiving ends of these tracks where a Trackmobile from the shop picks them up as needed and pulls them into the building. When repairs have been completed, the Trackmobile pushes the cars out of the leaving end of the building where they are picked up later by a switch engine. Cars are cleaned outside the building before they are brought in.

Because the work is done under cover and is more easily supervised than in the former more extended rip-track area, the railroad anticipates an increase in efficiency of about 35 per cent. Working with the present force of about 125 men on two shifts, an average of two cars are turned out each day from the heavy-repair section and from 60 to 70 cars a day from the light-repair section. If necessary, additional production can be obtained by putting on a third shift.

The Chesapeake & Ohio's Greenbrier Clinic occupies the entire top floor of a wing of the railroad's completely equipped resort hotel at White Sulphur Springs, W. Va.

Clinic Keeps Company Officers "In Production"

Chesapeake & Ohio and 35 other firms find it pays to "keep well men well"

The Greenbrier Clinic has been in operation less than four years. Yet already it has made a name for itself among 36 top-flight business corporations—including the Chesapeake & Ohio—as an ideal place in which to entice busy key executives to take time for a complete check-up on their "well-being." The result: it helps keep experienced officers "in production and out of the obituary column," to quote Dr. Howard A. Rusk, of the New York Times, an advisor to the institution.

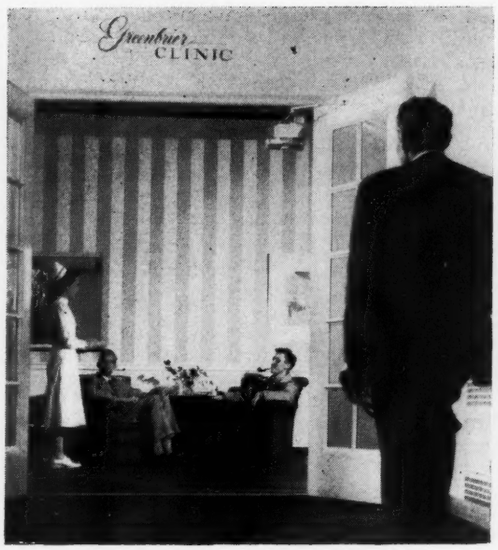
Provision for business executives to take a complete physical check-up every year, at company expense, is a fairly recent innovation in personnel policy. Check-up programs received impetus during World War II, and the practice has become a tested and profitable routine of a growing number of corporations, including a number of railroads. There are many good diagnostic clinics about the country, but practically all are administered in conjunction with hospitals or health centers. Busy men, who consider themselves healthy and fit, are inclined to shy away from hospitals where they associate with the sick. Even a clinic in a business executive's own city has the same alien atmosphere, with the additional disadvantage that it does not usually obtain his full time or attention.

Edward R. Stettinius, one-time chairman of the board of United States Steel, became convinced, in earlier years, when he was industrial and public relations vice-president of General Motors, that there existed a need for a special "check-up" clinic—in a congenial, healthy atmosphere—to which company executives could be encouraged to go. At the close of the war, the Chesapeake & Ohio purchased back from the Army the Greenbrier, a resort hotel which it had owned since 1910, but had turned over to the Army for a general hospital. Mr. Stettinius suggested it would serve exceptionally well as locale of the kind of diagnostic clinic he envisioned.

The railroad accepted the challenge. It financed construction of a brand-new type of facility occupying the entire third floor in the "bath" wing of its refurnished hotel, with equipment designed to take advantage of every new tool in the science of "taking human inventory." The clinic opened in July 1948. Well over a thousand "patients" have been examined since that date—many of them four times. Their number has doubled each year.

Since it is housed in the Greenbrier, the clinic's patients have the advantage of staying at one of the country's oldest and most famed resort hotels. For all except special "cases," clinic schedules leave afternoons and evenings free for enjoying the manifold recreational activities of a 7,000-acre hotel estate. On the other hand the clinic is completely independent of the hotel and of the owning railroad in staff and operation.

The Greenbrier is at White Sulphur Springs, W. Va.,



Officers of 36 corporations—including the C&O—find nothing of the hospital atmosphere in their annual check-ups.

Machines and trained technicians help five physicians probe into business officers in the mornings of three successive days. They may find incipient conditions which would cut down productivity later.

along the main line of the C&O, on the western slope of the Alleghany mountains about 8 miles from the railroad's summit. It is 472 rail-miles from New York, 354 from Cincinnati, 656 from Chicago, 715 from St. Louis, and 517 from Detroit, and is served conveniently by main-line trains of the C&O with through cars from those cities.

A total of 36 business and industrial concerns now have regular annual programs with the clinic. Beside the C&O itself, they include manufacturers of steel, electrical appliances, automobiles, rubber products, and bakery goods; coal producers; a management consultant firm; a construction outfit; and an oil company. Some are among the top ten of America's corporations in the value of their assets. Others are relatively modest, medium-size businesses. Of the total, 13 are repeaters. All of the latter have increased each year the number of officers each has invited to take the check-up.

An important factor in the clinic's drawing power is that its company program is voluntary; officers are invited to attend—not ordered to do so. Furthermore, with but a few exceptions, the clinic's findings are sent to the patient or his own doctor—not to his employer. Whereas, at some clinics, a high percentage of business executives assigned by their companies have been "no shows," the Greenbrier gets almost 100 per cent follow-throughs. This is especially true of C&O officers. Only two failed to take advantage of their opportunities to go through the clinic—and one of these resorted to his own physician.

Since the clinic was opened, it has given 358 full-scale examinations to C&O officers. The railroad has increased the list of executives programmed each year. In 1949, it invited 90 men; in 1950, a total of 110; and in 1951, a group of 154. The C&O list now includes officer personnel to and including division superintendents and comparable grades in other departments.

How do railroad officers stack up in health as compared to the executives of other industries? The clinic's staff hesitates to reveal averages, or norms, until their "sample" has grown to much larger proportions. But on the basis of the relatively short experience of the clinic —and with a range of unusually rich and varied subject matter—it can be said that, thus far, the C&O group show no special occupational tendencies. Their average age is 50—which is exactly that of all the company executives who have been through the clinic. They show the same relative distribution of significant disease diagnoses.

Taking into account all businessmen patients of the clinic, each year about 20 per cent are overweight; 18 per cent exhibit significant abnormalities of the heart and blood vessels; 10 per cent require special attention to the digestive system. Some 7 per cent are diagnosed "no significant disease or tendencies." The record shows that, since the clinic was established, 85 executives have been found with lesions which could have led to cancer. A number of "unknown diabetics" were discovered.

The Greenbrier Clinic is not a mass machine. Each patient goes through with a single doctor. For the most part, the repeater gets the same doctor every year. The "check-up" program for each patient is routine only up to a point. Thus, everybody gets the usual physical examination, fluoroscopic study of the heart, chest X-ray, electrocardiogram and blood and urine studies. Thereafter the clinic explores those parts and functions which an original two-hour interview indicates are a source of concern to the patient or are emphasized in his medical history. Thus, a man who complains of abdominal pains, may get several special examinations of the digestive system—such as X-rays of the colon and the gall bladder. For the average patient, the check-up takes three days. It costs $100. The only additional charges are for specialized X-ray work.

Since its job is to "keep well men well," the clinic believes the biggest "pay-off" for business concern clients lies in examinations of younger executives, whose years of productivity can be lengthened and assured by early diagnosis of tendencies which, if undiscovered, could retire a man for physical disability before his normal retirement date.

The medical director of the clinic is Dr. James P. Baker. With him are associated five physicians, two laboratory technicians, one X-ray technician, two nurses and three office personnel. Twice a year the staff meets with an advisory council of 22 outstanding members of the medical profession, who serve voluntarily.

An Able Book About Joe Eastman*

Claude M. Fuess—retired headmaster of Phillips Academy, Andover, Mass., and a contemporary of the late Joseph B. Eastman as an undergraduate at Amherst—has produced a really high-grade Eastman biography. The book is well written and detailed, notwithstanding some minor inaccuracies. It must have been a hard biography to write. A commerce lawyer could interpret the professional part of the Eastman story, or someone who knew Mr. Eastman's personal background could do that part, but for one individual to do both parts, as Mr. Fuess has done, must have taken some doing. No railroad man with any interest in the eventful quarter-century that Joe Eastman served on the I. C. C. will find reading this story a chore.

The time is appropriate, too, for bringing up a discussion of Joe Eastman and his career, because Eastman's virtues are certainly not any more prevalent today in government service than they were while he lived; and both his virtues and his faults are peculiarly instructive, because Eastman's behavior was always unusual enough to be interesting.

Eastman had and still has some critics, who insist with considerable plausibility that he was really not a great man. They point out that, after all, his job was in substance that of a jurist—and, they pointedly ask: Where is there to be found any great Eastman legacy in the direction of more enlightened dealing of the government with transportation? The author, however, does not seek Eastman's strength where it did not exist—that is, in deep and original juristic insight or wisdom—but he turns his spotlight instead (and correctly, in this reviewer's opinion) on Eastman's almost unique depth of character.

It wasn't merely unquestioned integrity that Eastman possessed—unadorned integrity can be a trying virtue, however praiseworthy. But Joe Eastman was kind; and quiet humor and good nature simmered constantly in him. The author quotes a tribute by Carter Fort, expressed at the testimonial dinner held shortly before Eastman's death, to the effect that Eastman "had never done a shabby thing, never thought a shabby thought." It might also be said that he seldom was ill-natured or ungenerous.

How many virtues does a man have to have to be great, anyhow? One or two of the most attractive ones, intensively developed, ought to be par for the course—and Eastman certainly had that quota. The tendency some people detected in Eastman, sometimes, giving his credence to those unworthy of it, while remaining suspicious of those who better deserved his support, is only a minor minus, compared to his positive strength in other directions. As for administrative ability—Eastman never claimed to have it, but quite the contrary. Nevertheless, the job he did in eliciting cooperation under O.D.T. was a major accomplishment.

Then, too, how many men have had the ability to keep on learning—and changing their fundamental attitude toward their environment on the basis of their new knowledge—up into their sixties, as Eastman did? Eastman started out his career with a profound prejudice against private management of large-scale enterprise, particularly in railroading, and he lived to develop, and express, an even more profound distrust of government management of the same industry. He entertained for years the orthodox "liberal" faith in the automatic virtue of labor unionism, and he lived to modify that opinion too. He also learned a great deal of discernment, which he did not have at all at the outset, in distinguishing between true liberals and the phonies who lay claim to the title. Maybe Eastman didn't learn as fast as some people, but his progress was sure; and he didn't have the customary false pride in a "position" once taken, which prevented his altering it. All of these qualities of character, pro and con, are frankly and competently weighed by the biographer.

Before the reviewer as he writes these lines is an essay by an eminent clergyman discussing the meaning hidden behind the poetic language of I Corinthians, 13—the famous "sounding brass and a tinkling cymbal" chapter. The purpose of this chapter, it is explained, is to define "charity," better translated as "love" (not the Holywood variety, of course). What St. Paul says of such charity or love is that it is slow to lose patience; tries always to be constructive; isn't anxious to make an impression; isn't self-important; has good manners; doesn't pursue its selfish advantage; isn't touchy; doesn't gloat over evil; rejoices when truth prevails; and never loses hope or gives up. These attributes seem almost tailor-made to describe the kind of character Eastman consistently displayed.

Joe Eastman subscribed to no formal religious faith, but he came from a clerical family. He must have got his attitude toward life and people from some one who knew how to communicate love—not mush, but that practical cement, without some admixture of which society falls to pieces. As it is falling to pieces everywhere, where this virtue is neither exercised nor communicated.

There are some who suspect that, even in the Western Hemisphere, we may be exhausting, rather than adding to, the capital of social cement bequeathed to us by the old-fashioned piety of our forebears. If so, Joe Eastmans may be even rarer in future than they have been in the past. Whether or not our situation is this desperate, there could scarcely be a more profitable occupation than studying in the flesh the why and wherefore of this sovereign virtue. Biographer Fuess makes this study interesting as well as elevating—and without too much violence to accuracy in a highly technical field.

* "Joseph B. Eastman, Servant of the People," published by Columbia University Press, New York, Price $5.

"My Church Means Everything to Me"—Wayne A. Johnston

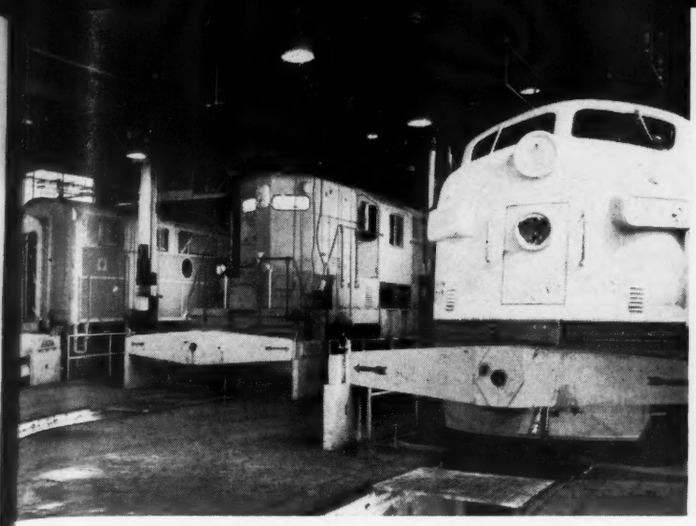
"Some of the greatest satisfactions I have had in my journey thus far along life's way have been in my church associations or have come from them. In short and in plain words, my church means everything to me. We don't have many occasions to say such things, and I sometimes wonder if we shouldn't—all of us—say them oftener than we do. . . . There is no greater service that Christian men can render to their church than to make their church count through their examples in the lives of young people. . . .

"Most of the training in the railroad business is through personal contact. You don't learn railroading in schoolrooms or libraries. It is learned on the job under the tutelage of men who in turn have learned what they know from others before them. In this process of breaking in our newcomers and overseeing their training and supervising them in their work, I am convinced that we teach as much and maybe more by example as we do by what we say. . . . That is why I bring the church and what it stands for very frankly into our consultations.

"We live busy lives on the railroad. Most of us in responsible positions are on call twenty-four hours a day, seven days a week. But I insist that our men take time in their busy lives for at least two very important things. One is their families. The other is their church—whatever that church may be. . . .

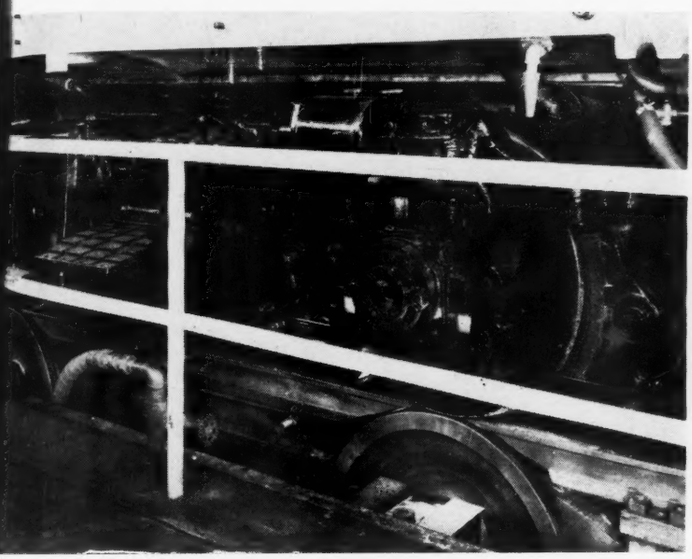
"I believe this coming national election will be the most critical election we have ever had in the United States. I think those of us who are concerned about it should go to work and not let up until the ballots are counted. . . . Bad men are not elected to office by bad voters. They are elected by the good voters who stay away from the polls on election day. If the church people of America will turn out and vote in this coming national election, I believe we can arrest the Communistic, materialistic, anti-Christian menace that is threatening to wipe away all that we hold dear."

——*From an address by the president of the Illinois Central to the Fellowship Group, First Baptist Church, New Orleans, La.*

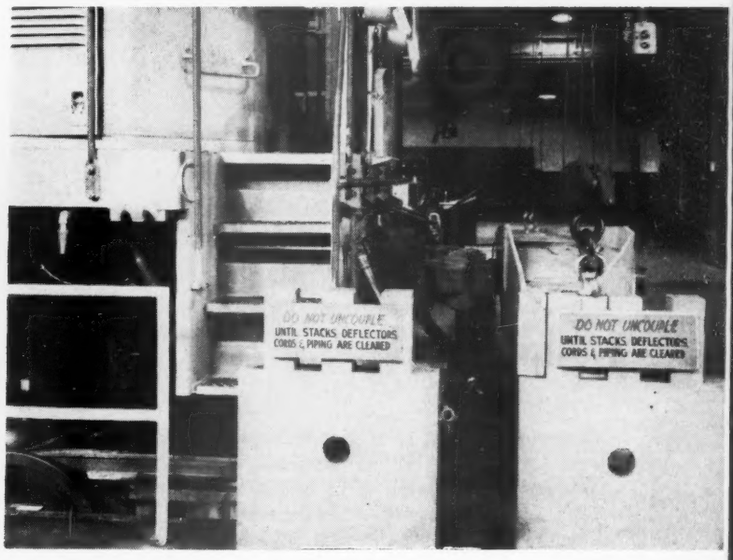


Three locomotives being tested on the three treadmills.

A general view of one of the treadmills.



A close-up of a locomotive truck showing how its wheels engage with those of the mill. The mills are, in effect, locomotive trucks turned upside down in a pit.



Bumper blocks with a cross beam in place showing how the hoists are used to lift the beam when a locomotive is to be moved.

"Treadmills" Test Locomotives

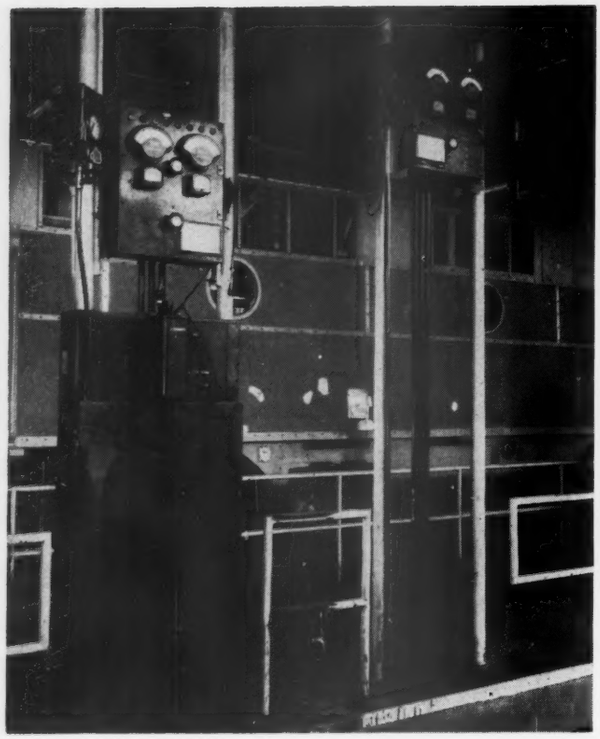
Three dynamometers developed by Electro-Motive are used to load-test new and rebuilt diesel-electric locomotives

All new and rebuilt diesel-electric locomotive units coming out of the La Grange plant of the Electro-Motive Division of General Motors Corporation are given load tests after they are completely assembled and before they are painted. Three dynamometers, referred to in the plant as "mills," are used for this purpose. By this means, carefully controlled load tests are made without the need of a test track or road test with a dynamometer car.

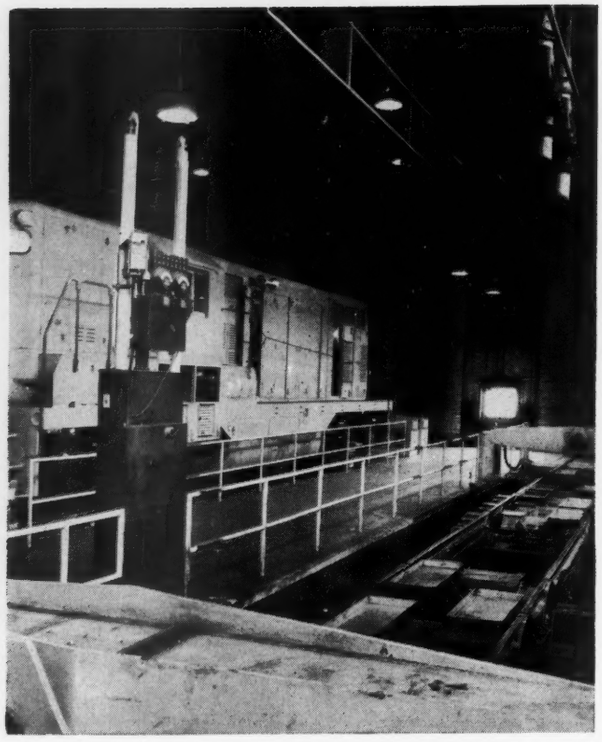
The mills are, in effect, locomotive trucks turned upside down in a pit. The locomotive to be tested is placed on the mill wheels, which turn when the locomotive is operated.

The motors of the mill trucks then can operate as generators and are loaded on dynamic braking resistors. Excitation for the mill motors is supplied by a motor generator set.

The wheels of the mill motors have no flanges and



A door-height and a window-height mill control stand. The bracket instruments at the left of the panels are mill speedometers. A hostler controller is below the left panel.



A treadmill with a single control stand. The three treadmills are essentially similar and differ only so that they may accommodate different types of locomotives.

the upper edge of their rims are flush with the mill track. Sections are cut out of the track to make this possible. When a locomotive is to be tested, it is driven on the mill track and stopped when the wheels of the locomotive engage with those of the mill. Removable cross beams in the bumpers on each end are then lowered into place by hoists. The couplers of the locomotive are engaged with those on the bumpers and screw adjusters on the bumpers are then turned until the locomotive rests on the mill wheels without touching the track rails. This is done while the locomotive is operated in both directions.

Operates Under Own Power

During the test, the locomotive is operated under its own power, driving the mill generators. To control the load, the field of the mill generators is varied by a rheostat in the field of a motor-driven generator. This rheostat is placed outside the cab door or window of the locomotive being tested so the operator may adjust the load while he operates the locomotive throttle. Any desired combination of speed and load may be obtained at speeds up to 50 m.p.h. Each mill has its own motor-generator set for excitation. Blowers driven from shop power cool the generators.

On the load generator control stand outside the locomotive cab window, there are instruments showing generator armature volts and amperes, field volts and amperes, and two field rheostats respectively for coarse and fine adjustment of generator field strength. Below the panel on the outside control stand on two of the mills, there is a hostler controller. These are used to control engine operation on B units not equipped with hostler control.

There are speedometers on each of the mills. These are equipped with overspeed trips which will open the locomotive generator field in case excitation should be lost on the mill generators. The three treadmills are essentially similar and differ only so they may accommodate different types of locomotives.

Exhaust gases from the engines are carried out through the roof by means of stack adjusters which connect the locomotive stack to the exhaust hood. The hood may be lowered or raised and moved horizontally to accommodate different locomotives.

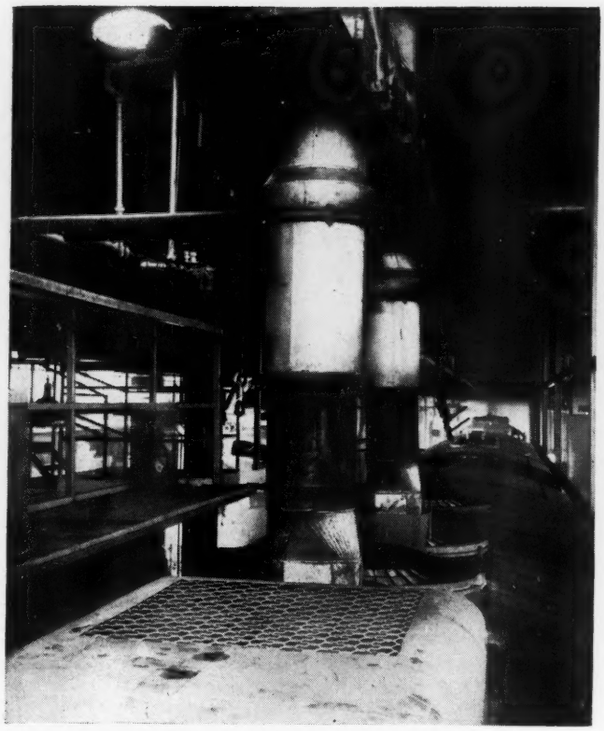
Test Procedure

The locomotive is first run in both directions with the throttle in the second notch while a check is made of the wheel slip relay functions. This is done by unbalancing the wheel slip circuit.

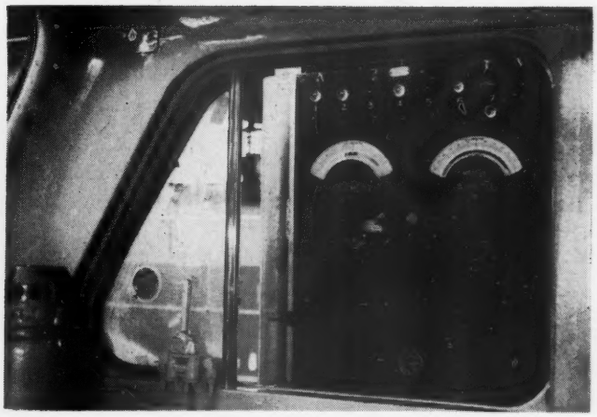
The second step in the test consists of checking the actions of the ground protective relay. This is done by applying an artificial ground successively to each side of the power circuit and watching the relay action. A visual check is also made of all rotating equipment, of oil pressure, water temperature and fuel supply.

After a warm-up, when the water temperature reaches 140 deg. F., a manual sequence check is made. This consists of going through all of the transitions forward and backward while the engine is operated in the second notch.

The throttle is then advanced to the fourth position and the engine is run for 20 minutes. The engine water temperature alarm switch is set and the cooling fan speed and the operation of the a.c. cooling fan contactors are checked. At the end of the 20-minute period, the unit is shut down and a general check is made of



Telescoping connections, which may be moved vertically and longitudinally, connect the locomotive stacks with the exhaust hood in the locomotive building.



A control stand panel as it appears through a locomotive cab side window.

journal and motor bearing and motor temperatures.

The engine is then restarted and the unit is operated for 10 minutes in the sixth position at 10 m.p.h., for 10 minutes in the seventh position at 14 m.p.h., and then a full load run of two hours is made in the eighth position. This is done at 18 m.p.h. on the F7, and at different speeds on other units, depending upon the gear ratio. Rotation of the motors is reversed every 15 minutes.

During the run, all functions are checked and temperatures noted. Any leaks are noted and recorded for subsequent repair. Temperature controls and relay current settings and transition operation are checked. The a.c. generator voltage is adjusted near the end of the run after temperatures become stable.

Steam generators are operated during the tests and all functions checked.

During the process of manufacture and before being assembled in the locomotive, all generators, motors and engines are load tested.

At the conclusion of a test, when a locomotive is to be run off the mill, it is, of course, standing on wheels which will rotate and thus prevent movement of the locomotive. This is overcome by applying field to the mill generators to produce the necessary tractive force.

BENCH MARKS AND YARDSTICKS—19

A "yardstick"—as the term has been used in this space—is a device for measuring other people. A "bench mark," on the other hand, is a guide or compass from which one gets one's own sense of adequate performance. Both measuring devices are needed, but a man with a lot of "yardsticks" for other people and no "bench marks" for himself is in a pretty bad way.

As a matter of fact, nobody lacks bench marks—it's the quality of such bearings, not their quantity, that counts. The fellow who marries quickly the most alluring lady he meets—without first finding out whether she can cook or converse or is gently disposed—does not lack a matrimonial "bench mark;" but probably the one he has isn't as useful as the one the chap has who reminds himself that handsome is as handsome does.

Many people derive most of their bench marks, without much painful thinking, by unquestioning acceptance of the teachings of traditional religion. Bench marks thus attained are often quite as dependable as those arrived at by harder labor. But not always. Sometimes what purports to be instruction in religion is so badly adulterated with non-essentials that the religion itself is obscured. For instance, the people who undertook the religious education of your reporter in his childhood so lectured him about the evils of dancing, card-playing, gum-chewing, smoking cigarets, movie-going and drinking cokes that they gave him practically nothing that impressed him about the fundamental virtues. Discovering by cautious experiment that the minor vices thus specifically indexed were by no means immediately lethal, he held all religious tradition in low esteem until more mature observation taught him otherwise.

However one's bench marks are come by—through faith or study or the school of hard knocks—they need constant critical attention. Nobody can guide his actions dependably when the landmarks that he uses for direction are constantly shifting position, or point the wrong way.

If mature people could exchange experiences in arriving at the bench marks each has discovered for himself, probably all participants would learn of some highly useful devices from the others. This suggestion is not put forward as a mere pious abstraction, but as a practical means toward more efficient and more profitable railroading; and happier and more successful railroaders.

The opening session of the twenty-sixth annual meeting of the Mechanical Division in the Terrace Room of the Fairmont Hotel, San Francisco, on June 24.

No Dearth of Mechanical Problems

Both old and new were subjects of discussion at San Francisco meeting—More research and attention to human relations recommended

Contrary to the concern felt by many interested persons as to the extent of the attendance at a meeting on the Pacific Coast of the Mechanical Division of the Association of American Railroads, the meeting at San Francisco on June 24 to 26 was well attended by representatives of nearly 80 railroads, including those in the East, South, Middle West and Northwest, with a large attendance from the Pacific Coast, and representatives from Canadian railroads and Mexico.

There were 17 technical reports on the program. Less time was devoted to presentation and more time to discussion than has been the custom during past years. Eleven of the 17 reports were discussed.

Addresses were made by the presidents of two Pacific Coast railroads, D. J. Russell, of the Southern Pacific, and F. B. Whitman, of the Western Pacific. There were three other speakers: W. J. Patterson, member of the Interstate Commerce Commission; E. H. Davidson, director of the Bureau of Locomotive Inspection, I.C.C., and L. L. Adams, manager, transportation planning, United States Steel Company. All dealt specifically with matters with which the members of the Mechanical Division are concerned. Mr. Adams told how freight cars look to a steel shipper and made specific suggestions for better meeting the needs of the steel industry. His address will be the subject of an article in an early issue of *Railway Age*.

The following pages report aspects of the other addresses and of the committee reports which are of general interest.

Mr. Russell, in his address at the opening session, challenged the railroads to do more than research and the urge to develop better equipment and better ways of doing things already have accomplished on American railroads. "There are always better undiscovered ways of doing any job," he said, "and better kinds of equipment with which to do it. We must engage more vigorously and with more imagination in railroad research—in laboratories or on the job—striving to find better and more efficient ways of serving the public."

As examples of the need for constant striving for improvement he cited air conditioning, which has been a great boon to the traveler, but needs more research to improve its reliability and to simplify it so that difficulties may be overcome more readily when they occur.

Inspection of freight trains on the Southern Pacific by walking from end to end is being replaced by inspecting rolling trains in yards, using pits, towers, lights, mirrors and other aids. This has made inspection faster and it is done better. Better shock absorption is needed in freight cars. He asserted that, along with specialized cars, more and more of which are being built, there is need from the railroad standpoint, for a car suitable for wider use. Based on an estimate that about one-fifth of the freight moved by railroad can be moved in containers, he advocates that a great deal more research be devoted to that subject. Containers might make box-car protection unnecessary.

Mr. Russell also called attention to the fact that freight

General Committee of the Mechanical Division in its meeting room at the Fairmont Hotel, San Francisco on Monday, June 23. Left to right: J. A. Gower, assistant mechanical engineer, Pennsylvania; L. B. George, assistant chief of motive power and rolling stock, Canadian Pacific, alternate for W. A. Newman, chief of motive power and rolling stock; F. K. Stremmel, assistant secretary; J. L. Carver, mechanical and research engineer, Illinois Central, alternate for A. G. Kann, general superintendent equipment; Fred Peronto, secretary; W. M. Keller, director of mechanical research; V. R. Hawthorne, executive vice-chairman; B. M. Brown, general superintendent motive power, Southern Pacific, chairman; H. T. Cover, assistant vice-president and chief of motive power, Pennsylvania, vice-chairman; D. S. Newhart, general superintendent motive power, Union Pacific; J. P. Morris, general manager, mechanical department, Atchison, Topeka & Santa Fe; F. K. Mitchell, manager equipment, New York Central system; M. R. Brockman, assistant vice-president, Southern; F. H. Einwaechter, chief engineer, motive power and equipment, Baltimore & Ohio, alternate for A. K. Galloway, general superintendent motive power and equipment; and C. E. Pond, assistant to superintendent motive power, Norfolk & Western, alternate for R. G. Henley, who is general superintendent motive power.

The Arbitration Committee held a meeting at the Fairmont Hotel on Monday, June 23. The chairman, J. A. Deppe, superintendent car department, Chicago, Milwaukee, St. Paul & Pacific, is seated at the right at the end of the table. The vice-chairman, W. N. Messimer, general superintendent of equipment, Merchants Despatch Transportation Corporation, is second from the end of the table at the left.

cars spend about four times as many hours in yards and terminals as in actual service, which means that "if we could reduce the loss of time by 25 per cent, we gain 100 per cent in useful time." "We point with pride to our increase in ton-miles per freight-train hour, calling it our index of operating efficiency," he said, "but we cannot point with pride to our record of car-hours motionless."

Another serious problem to which Mr. Russell referred is the perennial hot box. "Somewhere is the know-how that will eliminate it," he said. "We wonder if the present conventional journal box assembly and method of lubrication can be continued in use and in practice indefinitely." Research can and will "find the answer."

Another object of research is standardization of equipment parts, which increases availability and reduces inventories of parts required for maintenance. But, the speaker remarked, "when researchers come up with something better than our standard, we must adopt that new thing as quickly as can practicably be done—taking the long view rather than the short one."

As an example of the new problems with which the railroads will continually be faced, Mr. Russell cited present diesel fuel and lubrication difficulties. "Eventually," he said, "I am afraid, the grade of distillate fuel available for railroads will be lowered. And in diesel

D. J. Russell, president of the Southern Pacific; and V. R. Hawthorne, executive vice-chairman, Fred Peronto, secretary, and B. M. Brown, chairman, respectively, of the Mechanical Division, at the opening session on June 24.

locomotives the lowering of fuel quality will increase lubrication problems. We must develop efficient engines using lower grades of fuels. The gas turbine may be a development in that direction."

Mr. Russell advocated the use by individual railroads of outside technical research facilities. He told of the experience of the Southern Pacific in a study of the efficiency of fuel consumption on steam locomotives conducted in the railroad's own laboratory with the help of Battelle Memorial Institute. This resulted in saving many times the cost of the investigation, even though not enough to forestall the diesel invasion. The Stanford Research Institute, connected with Stanford University, has also served the Southern Pacific. These organizations, he said, are available to anyone and he stressed his belief that railroads should not hesitate to use them.

Among the developments which have taken place on the Southern Pacific, of which it is proud, Mr. Russell mentioned the electric baggage elevators on passenger cars to eliminate crowding of vestibules in loading and unloading, derailment safety guides to keep derailed trucks in line, boiler drop plugs to prevent steam-locomotive boiler explosions from low water, gyro-jet oil burners for steam locomotives, and steps to prevent weevil infestation in box cars. He closed with reference to the new Coordinating Committee on Physical Research of the A.A.R. under the direction of Vice-president Aydelott with its membership of three from engineering, three from mechanical, two from test departments and laboratories, and one an expert on containers and freight loading, whose recommendations to Mr. Aydelott will guide policy.

Diesel Conditions That Need Watching

Both Commissioner Patterson and Director Davidson directed attention to certain diesel conditions which need close attention, some of which indicate a lack of adequate maintenance. Commissioner Patterson spoke at the first day's session. Hot bearings in locomotive running gear, he said, can not readily be detected by the engine crew in the control compartment and there is a definite need for a more reliable form of hot-box alarm. Wheel failures continue to cause concern and the condition of new unmounted wheels and continued reports of failures indicate the need for further research and development.

Air-brake defects and failures indicate improper testing or no testing at all, the commissioner remarked, and he reminded the members that the dynamic brake is supplemental to and not a substitute for the air brakes on individual cars. Already where the dynamic brake is used there is, in his opinion, a tendency to neglect air-brake testing and maintenance.

Fumes in the cabs of diesel locomotives seem definitely related to some serious accidents and prompt and serious consideration should be given this matter by each road in the light of its own operating conditions. "We are now finding some practices," he said, "that appear to indicate that mechanical supervisors, perhaps in their desire to obtain maximum performance and insure protection against breakdowns, may be overlooking the necessity for full compliance with operating rules."

Three Matters of Concern

Director Davidson, at the second day's session, laid particular stress on three matters of great concern to the Bureau of Locomotive Inspection and to the railroads generally:

(1) Injuries to employees resulting from oil and grease accumulations on decks and passageways of diesel-electric locomotives resulting from oil leaks or inadequate maintenance, a condition about which there is little that an engine crew can do en route.

(2) The failure of wheels under locomotive units is resulting in an increasing number of accidents, to prevent which he asked the cooperation of mechanical men in stepping up wheel inspections and keeping wheels clean so that inspectors may readily find the defects.

(3) Inspections and the remedy of defective conditions, which, if recurring, may be viewed as evidence of inadequate or insufficient repairs and, as such, call for corrective supervisory action.

Mr. Whitman spoke on Thursday morning. He called attention to the multiplicity of subjects on the docket for consideration at the Mechanical Division meeting and deplored the notable absence of anything relating to supervision and human relations. He praised the division for its important contribution in improving material standards, but said this is only part of the responsibility of mechanical department officers if they expect to get maximum results.

Elaborating somewhat on this point, Mr. Whitman

pointed out that engineers, both in industry and railway service, are generally more interested in materials than in people. No matter how skilled they become in utilizing material resources efficiently, this effort is largely ineffective without due attention to the human element. He said that railway employees and supervisors are the biggest asset of any railroad, and this is borne out by the fact that wages are the largest single item of railway expense. For low-cost operation, some means must be found to get better results with present forces, or the same work with fewer people.

The speaker earnestly recommended more general use of employee and supervisor training courses, more frequent staff meetings of supervisors as well as of higher officers, and a special effort to recognize individual accomplishment and encourage teamwork. He said that competent supervisors will not only study personnel problems, but present their need for new tools and equipment so factually that management can intelligently evaluate the needs and take appropriate action.

Mr. Whitman urged the Mechanical Division to give some attention to employee training and relationships and to appoint such committees as are required to develop constructive information and suggestions pertaining to this important subject.

In welcoming the Mechanical Division to San Francisco, the chairman, B. M. Brown, general superintendent motive power of the Southern Pacific, said that he considered it desirable to hold these meetings in different parts of the country because of the increased attendance of local mechanical people who might otherwise never participate in an annual meeting, and because of the broader interests thus aroused in the work of the division. He referred to the scheduled convention and exhibit in Atlantic City, N. J., next June and urged early plans for a large attendance of railway men.

Mr. Brown outlined the scope of the division's activities in the reports of the 19 committees which comprise over 200 railroad men. He stressed the need for further research and credited the manufacturers with much of the advance to date in locomotive and car design and performance.

The General Committee is looking ahead to the Mechanical Division annual meeting at Atlantic City during the week of June 22, 1953, in connection with the Eighth Pan American Railway Congress at Washington, D. C., and Atlantic City. The exhibits which will be displayed at Atlantic City next year will be extensive and it is considered important that mechanical men from all sections of the country be in attendance. The General Committee urges the railroads to send as many representatives as possible to that meeting.

Gas Turbine Closely Watched

The report of the Locomotive Construction Committee dealt with steam and electric motive power and also the gas-turbine locomotive.

The gas-turbine section of the report reviewed progress with the Alco-G.E., 4,500-hp. oil-fired gas-turbine-electric freight locomotive on the Union Pacific; the Westinghouse-Baldwin 4,000-hp. oil-fired passenger locomotive first tested on the P&LE and assigned to baggage and express train service on the PRR last February; the proposed Allis-Chalmers 4,200-hp. coal-fired gas turbine unit which has undergone over 750 hours of practically full temperature and load test at the Dunkirk, N. Y., plant of the American Locomotive Company; the Baldwin-Lima-Hamilton 3,200-hp. free-piston gas-turbine locomotive which is experimental and closely allied with gas-generator development for the Navy, now classified as restricted information; and the Brown-Bovari 2,500-hp. oil-burning unit assigned to experimental passenger service on the western region of the British Railways.

F. Fahland, general mechanical engineer of the Union Pacific, commented briefly on the present status of the four gas turbine locomotives in service on that road; the first, No. 51, was placed in service January 31, the second on April 9, the third on May 7, and the fourth on June 4. They are in freight service on the 176-mile district between Ogden, Utah, and Green River, Wyo., with a maximum grade eastbound, Ogden to Wahsatch, of 1.14 per cent, and a maximum westbound, Green River to Evanston, of .82 per cent. The locomotives are handling up to 5,000 tons westbound.

In the three-month period, January 31 to April 30, No. 51 traveled a total of 26,825 miles, producing 104,436,000 gross ton-miles, consuming 419,123 gallons of turbine fuel and 28,170 gallons of diesel fuel. The turbine operated a total of 1,233 hours, using 4.28 gallons of fuel per thousand gross ton-miles. The availability of No. 51 during this period was roughly 76 per cent. The availability for the other locomotives is expected to be higher because they have not been subject to the combustion-chamber troubles which were experienced with No. 51.

Turbine Failure Rectified

One defect in the power plant which is being corrected is that the first stage nozzle retaining bolts broke and the loose heads caused excessive thrust on the turbine rotor, resulting in the failure of the thrust bearings. This failure occurred on the first turbine after approximately 1,100 hours. The manufacturer has made necessary design changes and a program to progressively modify the four gas turbines now in service is under way, Mr. Fahland explained.

Operation has brought out clearly the need for extensive research on fuel and on combustion chamber design, he continued. Combustion chambers are inspected every 100 hours and some stainless-steel liner sections must be replaced at each inspection. Fuel atomizing nozzles are replaced every 50 hours at present because of short-lived synthetic seals in the spray heads.

The gas-turbine electric locomotives have been operated on straight diesel fuel, a heavy diesel fuel, a low ash residual fuel, and a special grade of desalted Bunker C fuel. All four turbines are currently using the special grade of Bunker C fuel which has been desalted and treated to meet a ratio of vanadium, sodium and calcium requested by General Electric. This special fuel costs slightly more than the regular Bunker C fuel and requires special handling and facilities.

Gas turbines in gas pumping service, using natural gas for fuel, have given excellent performance and parts life, and the Union Pacific is considering the possibility of burning propane gas in one locomotive.

Mr. Fahland said there are few complaints of excessive noise, and that there is less noise in the cab of the gas turbine than in a diesel locomotive. The noise from the gas turbine does not seem to carry as far as that from the diesel. There has been no indication of trouble in tunnels or otherwise because of heat from the exhaust stack gases.

Axle and Crank Pin Research

The division's Committee on Axle and Crank Pin Research has been particularly concerned with the proper disposition of axles which have had journals overheated. Severely burned axles which have been reconditioned

Interstate Commerce Commissioner Patterson speaking at the opening session of the Mechanical Division meeting.

F. B. Whitman, president of the Western Pacific, spoke on human relations in the mechanical department.

and returned to service without proper safeguards are considered by the committee potentially dangerous, but arbitrary scrapping of all axles which have been overheated would scrap serviceable axles. Strict observance of Rule 355(o) of the Wheel and Axle Manual by all roads would remove abused axles from service.

The committee's recommendation that such axles reconditioned in accordance with the rule be identified by stenciling, was said in the discussion not to be adequate because it misses the axles which are rebrassed on the road, perhaps after cooling by quenching with water. The experience of some members that a high percentage of failed journals are found to have been turned down indicates reconditioning after overheating.

A study of overheated axles on the Pennsylvania revealed that, when Magnafluxed, 90 per cent were found with cracks too deep to be removed by turning. It was suggested, on the basis of this experience, that it would be more economical to scrap all the axles than to Magnaflux all and reclaim the 10 per cent. Another factor affecting the reclaimability of axles, the journals of which have been heated until the bearing metal has been melted out of the brass, is the effect of copper penetration which seems to weaken the steel by destroying its intercrystalline bond. Acceptance of this as a definite effect of the contact between the hot journal and the brass bearing shell is growing.

In reporting on the progress of the axle-testing program under way at the Canton Laboratory, the committee said that a Class G axle, modified by water quenching from a tempering temperature of 1,100 deg., had its resistance to breaking off in the wheel seat increased by 50 per cent.

Standard Passenger Car Floor Plans

The committee on Passenger Car Specifications indicated that standardization of passenger-car equipment should be confined for the present at least to floor plans and car body structures, leaving installations and other details to suit individual roads. The committee recommends the adoption, as standard practice, of the 19 floor plans developed by the Passenger Car Committee of the American Railway Car Institute. These cover four coaches, three coach combinations, three parlor and parlor combinations, a diner and a diner lounge, and seven baggage and baggage combinations. The A.R.C.I. committee has been working on the development of plans for sleeping cars. Its preliminary proposals are now being studied by this committee.

The report calls attention to the number of different designs of automatic slack adjustors, both mechanically and pneumatically operated, which have been developed for freight cars. These devices keep the piston travel of cars at proper length at all times and therefore insure good braking results. These devices are used more extensively than heretofore to cut manual adjustments on cars in yards.

The committee is particularly interested in standardization of essential details such as mounting, and held a joint meeting with seven or eight manufacturers to work out standardization insofar as possible without surrendering the essential points of each device. This work is developing and it is expected that, if and when automatic slack adjustors are quite generally applied to freight cars, standardization will largely have been accomplished.

The committee recommended the adoption of a gage for condemning worn AB valve gaskets, which have been a source of much brake system leakage. It also reported that another inspection will be made of 25 Illinois Central cars equipped with load-compensating brakes, after which a report will be made.

Discussion centered around brake system leakage with particular reference to loss of air at AB cover gaskets. A representative of the Milwaukee said that replacement of back covers with the new reinforced type is too expensive and that road has developed a relatively inexpensive stiffener which can be applied to prevent warping at $1.30 each.

The need for effective means to charge full trains of AB equipment quicker again was emphasized.

During the past two years most of the manufacturers of geared hand brakes have introduced new designs incorporating the non-spin feature. Testing and approving these new designs has occupied time and attention of the committee and certificates of approval have been issued for a total of 31 types of geared hand brakes, including 19 vertical-wheel, 9 horizontal-wheel and 3 lever-type.

Loading Rules

The Committee on Loading Rules reported the completion of modernizing the open-top loading rules with the publication of Pamphlet MD-6 on March 1. The

E. H. Davidson, director, Bureau of Locomotive Inspection, Interstate Commerce Commission, discussed diesels.

L. L. Adams, manager transportation planning, United States Steel Company, talked about freight cars.

present open-top loading rules are now contained in six pamphlets and two special supplements pertaining to the loading of Department of Defense materials. The pamphlets, MD-1 to MD-6, are devoted respectively to steel products, machinery, forest products, pipe, miscellaneous commodities, and road grading, road making and farm equipment machinery.

As a part of the educational program set up by the Department of Defense in conjunction with the A.A.R. Operating-Transportation Division, six seminars, including visual aids, have been held at various strategic points and this work is being continued with promising results as regards improved and safer military shipments.

The possible revision of the two special military supplements was proposed at a joint meeting with the Department of Defense. A few days before the Mechanical Division meeting it was decided that representatives of the two groups would sit down together to develop rules for loading every conceivable type of military shipment.

The discussion stressed the importance of proper loading from the standpoint of the shipper as well as of the railroads. The tendency of the shipper to economize on labor and material in securing loads may cause serious hazards and delay deliveries. When the shipper is made to realize this he is less critical of the railroad.

Forest Product Loading

The Special Committee on Forest Products Loading emphasized that an analysis of the causes of shifted lumber loads shows many to be due to loading long material on top of short pieces. There is some loss of surfaced material from open-top cars due to shippers placing short pieces in the center of tiers whence they work off sidewise and endwise, frequently causing damage to signal and switch equipment. Violations of lumber loading rules were observed to include insufficient stakes and ties, undersize stakes, improper separators, incomplete top layers not properly secured, loose loading, and improper segregation of different lengths.

The discussion stressed the importance of the railroads working closely with lumber shippers so they will understand the need for living up to the rules. One difficulty in the way of getting tight loads is the variation in the width of open-top cars, varying all the way from 7 ft. 6 in. to 10 ft. A representative of the California Public Utilities Commission told how the railroads, lumber shippers and that commission work together to bring about safer loading of forest products. He stressed the necessity of load inspectors educating the men who assemble the lumber in units before they reach the car. These men, he said, though usually the last men hired, determine whether cars will be properly loaded.

Specifications for Materials

This committee reported investigating higher zinc content in the bronze backs of journal bearings and its effect on the strength of the bond. This investigation is being continued but, until all test results are available, recommendation is made that the present back, which now has a maximum zinc content of 3 per cent, be changed to a range of 2 to 3 per cent.

With respect to modifying various specifications in the interest of conserving materials in short supply, consistent with safety of operation and adequate maintenance of essential services, eight emergency specifications have been issued.

This report also contained a resume of activities of the committee with respect to diesel crank case lubricants and fuel and included recommendations for assigning the study to a small research advisory group. Already approved by the General Committee of the division, this work will proceed during the coming year.

Couplers and Draft Gears

The report of the Committee on Couplers and Draft Gears gives the results of continued investigation and testing of various designs. Three conditionally approved gears, reported to have been granted unconditional approval, include the Miner Type A-22-XL friction draft gear, the Waugh-Gould Type 420 and the Waughmat Twin-Cushion Type WM-4-6. The Hulson Type 202 modified and Type 202-A draft gears are listed in the report as conditionally approved and superseding the earlier Type 202 gear which did not always develop full capacity due to variation in spring tension, since corrected. The National Type MF-260 draft gear is reported to have met laboratory test requirement for rubber draft gears for freight service and been granted conditional approval.

Heretofore, railroads were required to check the condition of draft gears and attachments each time the air

Lubricating oils and greases are under intensive study to secure better performance and particularly to alleviate the perennial "hot-box problem."

brakes received periodic attention. This may have been adequate when K-Type brakes were more extensively used, as the inspection and repair period was then 12 months, but since AB brakes are in the majority, this period is now 36 months and draft gears under this arrangement do not receive necessary attention. The committee recommended that draft gears and couplers receive attention whenever cars are on the repair track for other work.

The report discussed master-coupler gages, flame hardening and service testing of draft keys, an improved coupler operating rod developed by the Standard Railway Equipment Company and suggested use of Grade B steel in coupler bodies and yokes to reduce costs.

It was suggested in the discussion that allowance of a credit for second-hand draft gears be discontinued inasmuch as no tests or specifications are available to check the quality of railroad work in repairing defective gears. The thought was expressed that defective draft gears, after removal, should be shipped to the owner for disposition if desired, otherwise scrapped.

Arbitration Committee

This report dealt with the work of the committee in revising mandatory interchange rules which control the observance of standards and other practices for cars moving in general interchange service.

Floods in the Kansas City area last summer damaged a considerable number of railroad and privately-owned freight cars and this presented many problems in the way of settling for the damages. The committee assisted greatly in settling some of these problems and in rendering various clarifications of the rules.

A change in Rule 112 is intended to discourage unnecessarily cutting up badly damaged foreign and private line cars to facilitate handling, which greatly increases car owner's cost of repairs or even makes it impossible to repair cars. It also provides a penalty against the handling line for failure to protect trucks and return them when cars are sent home for repairs loaded on other cars.

Another recommended change in this rule provides that iceless refrigerator cars (Classes RP, RPA, RPB) be settled for on reproduction cost basis with depreciation on that portion of the cost charged to capital account for mechanical refrigeration system computed at 6 per cent per annum on straight line basis from date of original installation up to a limit of 90 per cent. Cars are to be stenciled to show the kind of mechanical refrigeration and date of original installation.

Passenger-Car Rules Changes

The only changes suggested in passenger-car rules were extension to January 1, 1954, of the date for equipping all-steel or steel-underframe cars with cardboards or defect card receptacles; and the addition of a provision that the hand-brake mechanism and connections must be inspected, tested and lubricated when a car is on the shop or repair track for cleaning air brakes. No charge is permissible for this work but charge may be made for any repairs or renewals of details associated with it.

Changes were made in Rule 3 extending journal-box repacking from 15 to 18 months. The condemning limit for flat spots in chilled-iron wheels was decreased from 2½ in. to 2 in., or 1½ in. in each of two adjoining flat spots.

Prices for Labor and Materials

The Committee on Prices for Labor and Materials had an unusually active year by reason of frequent changes in material prices and labor rates, partly occasioned by the escalator clause in wage agreements.

Ordinarily this committee solicits material prices from nine representative railroads in the United States, plus one in Canada, and averages the quotations thus received, thereby determining equitable prices to be charged for material applied to foreign and private line cars in

connection with car repairs. Revised wage rates are also studied by the committee, with due consideration to overhead allowances, etc., and labor charges in the A.A.R. rules are revised accordingly.

Immediately on receipt of announcement of the four cents increase in hourly wage rates paid to employees engaged in car repairs, Item 92, covering freight car labor, was increased to $3.20 an hour and the major items containing both labor and material were reviewed and the labor portion modified accordingly. These changes were effective February 1, 1952. All combination labor and material allowances were reviewed later and will be effective August 1, 1952.

The committee added 25 items to the former list of 13 key items, thereby making a total of 38 major items, including either labor or a combination of labor and material, to be changed the first of the month following, whenever there is a net increase or decrease in the labor rate of at least five cents per hour.

Lubrication of Cars and Locomotives

The Lubrication Committee has been active throughout the year testing and developing suitable greases, lubricants and journal-box packing material for freight and passenger cars. Contact and collaboration with the joint committee on lubricating greases for anti-friction journal bearings has continued and additional types of greases for roller bearings are being studied. Two new types of greases have been conditionally approved, and subject to analyses after 350,000 miles have been run, it is expected that unconditional approval will be forthcoming.

This committee has been actively concerned with developing greases which are compatible and will operate from one wheel change to another.

Effective January 1, 1951, emergency specifications for journal-box oil and packing were adopted. A revision of these emergency specifications is proposed for journal-box oil. Basically, these proposals involve a low viscosity, high film-strength oil and provide for the use of oiliness additives with definite restrictions. When the specifications committee completes tests now in progress, this new oil may be adopted.

Besides the conventional type of lubrication in the form of waste used in combination with oil, three other lubricating devices have been tested on individual railroads and are now being tested in general interchange service. The performance of these devices, which include the Empire, Hennessy and Jeffers lubricators, is being actively followed by the committee.

A cross section of the comments of four speakers from the floor following presentation of the Lubrication Report was that the age-old problem of hot boxes is getting "no better fast." The major factor in this hot box problem, said one member, is rough handling in train yards and nothing much is being done about it either by mechanical or operating departments. The consensus was that one of the principal underlying causes of hot boxes is the failure of the roads to carry out the instructions of the A.A.R. in packing journal boxes.

Hot-Box Alarm Devices

No new devices were submitted for test during the year and the few suggestions of inventors were not sufficiently developed to permit laboratory investigation. The bolometer or electronic radiation type device for detecting overheated journals was scheduled for investigation, but a request to the inventor for a working model for test purposes was disregarded and nothing has developed in the past year.

The committee summarized 12 months' experience with the Twin Plex Alarm for both solid and roller bearings on NYC diesel and steam locomotives, and passenger cars, 64 cases being recorded with 54 indicated by odor, seven by smoke and three by both odor and smoke. Alarms were generally given by trainmen, towermen, station employees, section men or yard men. Usually the equipment was subsequently operated under reduced speed to the nearest terminal where brasses could be changed or the equipment cut out of service.

The committee report also included a further statement about the Fenwal Journ-A-Larm system to detect hot roller bearings applied on a group of new SP passenger cars since 1949. This device performed satisfactorily last year except for a few false indications which the manufacturer expects to overcome with a new design.

The general trend of the discussion of hot-box alarms centered around false indications which seem to be the result of open circuits due to failures in the wiring on the car trucks or in the thermo switch. Continued study is being given to the troublesome characteristics of some of the existing types of hot journal alarms. One speaker described a new hot-box alarm improved to eliminate some of the faults of existing designs, which, while it has been in service only a short time, gives indication of making a substantial reduction in the number of false indications.

Tank Cars and Wheels

The report of the Committee on Tank Cars included specifications for a number of classes of tank cars fabricated of aluminum instead of steel, but having comparable strength characteristics. The design of tank and appurtenances are the same in general and require a calculated bursting pressure of at least 300 p.s.i. and a periodical tank retest at 60 p.s.i.

In the report of the Committee on Wheels changes were recommended in the 650-lb. chilled-iron wheel tread and flange contour to conform with the standard. The report shows reduction in chilled-iron wheel failures from a 1946-50 average of 239 to 222 in 1950 and 198 in 1951, the latter figure including eight wheels of two designs cast prior to 1938.

The report carried a recommendation to the General Committee that 1,000 experimental cast-steel wheels with 1.50 per cent carbon, manufactured by the Southern Wheel Division of American Brake Shoe Company, be authorized for service under interchange freight cars; also an equal number of cast-steel wheels with .75 per cent carbon content, made by the Griffin Wheel Company.

The AX-28 temporary standard design of wrought-steel wheel was recommended for advancement to standard and redesignated as A-28 with no change in dimensions.

The report referred to several failures in the plate between hub and rim fillets of the diesel-electric wrought-steel F-36 wheels. A study is being made to determine causes.

In the discussion the fact was developed that some failures are occurring and giving concern not only to railroads but to the manufacturers. One railroad reported two failures of F-36 wheels in service and a third wheel was found cracked after thorough cleaning by sand blasting. The suggestion was advanced that ordinary solvents and cleaners are not entirely satisfactory for cleaning diesel wheels prior to magnetic

particle testing. It was maintained that, because of the severity of service conditions under which diesel wheels operate, stress analysis studies should be made with strain gages to determine just what requirements must be met. This is now a prospective A.A.R. research project.

It was pointed out that failures of chilled iron car wheels have decreased appreciably during the past three years, and apparently will continue to do so as wheels of older manufacture are taken out of service and replaced by chilled wheels of new design. It was reported that 116 of the new cast-steel wheels with 1.50 per cent carbon are now in test service and three sets of 20 wheels each with 0.75 per cent carbon.

Car Construction

The Car Construction Committee analyzed freight cars ordered during the year ending April 30, 1952, to show the extent to which member roads are following A.A.R. standards. Of 19,872 box cars reported, 1,000 are standard except for dimensions and the inclusion of floating center sills. The remainder are about evenly divided between cars which are A.A.R. throughout and cars which vary from standard in dimensions only.

Of 13,430 50- and 70-ton hopper cars, 4,500 are not standard; 5,750 are standard except for dimensions; and 3,180 are standard throughout. Of both types of cars only 13.5 per cent are not A.A.R. standard in any respect. All except 1,722 cars of a total of 18,282 of types for which there are not standard designs had center-plate heights of 25¾ in.

The committee recommends that a height above rail of 84 in. for the center of gravity of a car, loaded or empty, be the maximum that should be offered for interchange service without the possibility of incurring charges for special handling. This is the result of a study of recommendation of the Engineering Division and investigation of the maximum speeds on curves of varous railroads. The committee also recommends the subject for inclusion in the car service rules.

Auto loading devices in cars offered to the automobile industry have frequently been in unsafe condition. Lubrication of this equipment has been neglected and a lubrication chart has been prepared and is recommended for letter ballot action. It is also proposed to place the placard showing the date of last lubrication on the sidewall of the car near the door instead of on the end where it cannot be seen without getting into the car.

A proposal was made by the committee last year that insulation for refrigerator cars must be such that it will not support combustion, including the enveloping material used with the blanket material. A large number of negative votes were cast in the letter ballot on this proposal, and it was reconsidered and the provision with respect to the enveloping material eliminated. The General Committee, however, decided to refer this to the mechanical research department to determine how many types of insulation now produced would be eliminated from new construction if the changed proposal were to be adopted.

Test runs of cars loaded with Italian prunes with ice and two per cent salt, between Oregon and Chicago and the East, using three types of fans, and of oranges between California and the Eastern seaboard, using four types of fans, have established that built-in fans are as effective for precooling as the stationary or portable type used by shippers, and precool for less cost. A series of trips were made between Chicago and New York to determine whether the present rule of filling the bunker by reicing at destination is necessary to maintain proper temperature. The data developed that, in general, if the ice in the bunker was maintained at a level one-half or more of bunker capacity, proper temperatures were maintained.

In collaboration with the Committee on Wheels, the Car Construction Committee studied developing a suitable design of car for transporting mounted wheels. Drawings covering the proposed design were included in the report and should be helpful in eliminating damage which occurs in transporting wheels mounted in ordinary flat or gondola cars secured by various kinds of special locking which has to be applied when wheels are loaded and removed when they are unloaded.

During the past year 18 additional designs of truck side frames and 23 additional designs of truck bolsters have been approved. The subcommittee is now giving consideration to how to eliminate inadequate designs from service. The rules of interchange now outlaw T- and L-section frames, effective January 1, 1953. But some U-section frames are little if any better, and the poorer frames cannot be weeded out solely on the basis of age.

It is considered economically unjustifiable at present to bar all designs without A.A.R. approval from interchange service.

The discussion drew attention to the fact that not all frames failed because of weakness of the design. Corrosion is also a cause. Some form of chemical rust inhibitor, if one can be developed, was suggested as a means of prolonging the life of these castings. Cement is not satisfactory because it conceals defects from inspection.

Travel Springs Preferred

It is recommended that the service life test of helical springs for freight cars be terminated. The springs originally entered in the test were two of 1⅝-in. travel and one of 2-in. travel. During the period of the test a 2½-in. travel spring was adopted as alternate standard as well as two others, one with a 3-1/16-in. travel and one with 3-11/16-in. travel. These springs are now in general use with various built-in snubbing devices. They are being generally accepted because of the remarkable improvement in rideability of these trucks over the conventional trucks using springs with 1⅝-in. total deflection. It is the opinion of the committee, based on the test results up to now, that the longer-travel springs, properly snubbed, will give longer life as well as improved riding qualities.

Special attention was given to existing designs of bottom-rod and brake-beam safety supports. Down through the years, a substantial number of such devices have been approved by this committee, but it has been found that many of the older designs are not suitable for present day operation. The committee assembled data pertaining to all of these devices and those not meeting present requirements will be eliminated in the interest of preventing train accidents.

In the discussion one member advocated developing more satisfactory supports or eliminating them altogether. Some of them have a multiplicity of parts and he believed were the cause of more accidents than dropped brake beams.

The report covers another design of anchorage for securing lading straps and wire to gondola cars, also an anchorage arrangement for application to flat cars. The use of anchorage devices to permit safe securement of loads has met with great favor by the shippers as it enables them readily to secure their lading to cars with minimum time and expense. It also eliminates the necessity of cutting holes in car sides or elsewhere for the

Prolonged shortages of essential materials, accentuated by the current steel strike, have further delayed the railroads' equipment modernization program.

securement of lading straps or wires and thereby avoids abuse of equipment.

One discusser thought the anchorage arrangement for flat cars should be made standard rather than recommended practice. He called attention to the failure of straps secured to anchorages attached to the sides of open-top cars, by cutting on the edge of the top chord member of the car side.

The presence of weevils, or other insect pests, in any quantity in a freight car frequently results in rejection of the entire consignment. Even if the commodity itself is not subject to infestation, the insects may infest the consignee's property. There is also the possibility of condemnation under the Pure Food Act of the entire consignment by federal or state authorities. The committee reports that more thorough cleaning of existing cars has been responsible for improving the condition of cars offered for the shipment of grain and food products, and sets forth an inspection procedure and methods for dealing with infested cars.

Concerted action by railroads and shippers in carrying out the procedure outlined, the committee believes, will still further reduce the infestations which are current to a limited degree.

Commenting on the laboratory testing of various snubbing devices to determine life expectancy, for which the committee is procuring equipment, one member called attention to a report of the Special Committee on Damage to Dressed Beef issued by the Freight Loss and Damage Section of the A.A.R. dated June 4, 1952. The first finding of the report gives the committee's opinion that excessive vertical vibrations resulting from failure of certain snubbers adequately to control spring resonance is the major cause of damage to dressed beef.

HOW GENEROUS SHOULD YOU BE?

"You taxpayers have been most generous in giving public help to air lines, motor lines and barge lines. Billions of dollars in taxes have been drained from your pockets to help start and keep these people in business. Now, they have been operating a long time—long enough to start paddling their own canoes.

"They'll tell you that the Illinois Central had a subsidy once, too—a land grant. But the legislators of one hundred years back drove a hard bargain. They saw to it that their governments, federal and state, got back a hundred-fold, and more, everything that was given us. And they got it quickly, too. Today, the fashion is to heap on subsidies until the beneficiaries become so accustomed to easy living that they lack incentive to support themselves. With taxes, direct and hidden, taking an average of one-third of what you earn, this is no time for over-generosity. Much tax money goes for necessary government expense—too much for you to let any of your money be spent needlessly on air, motor carrier and barge operators.

"Help put the transportation business back on a free competitive basis. Then all of us—rail, highway, air and water carriers—will handle the jobs each is best fitted to do. And you—the people and industries of Mid-America—will enjoy true economy and efficiency in transportation."
—*Wayne A. Johnston, president of the Illinois Central, in a current advertisement prepared for on-line newspapers.*

OVERSEAS

British Transport Shows First Profit

For the first time since nationalization became effective on January 1, 1948, transportation and ancillary activities under control of the British Transport Commission have reported an overall profit for a full year's operations — approximately £100,000 (roughly $280,000 at current exchange rates) for the calendar year 1951.

This small surplus, which was after £2.7 million for capital redemption and £100,000 for special charges, compares with deficits of £14.1 million, £20.8 million, and £4.7 million, for 1950, 1949 and 1948, respectively. It reduces British Transport's cumulative deficit, as of December 31, 1951, after four years of national operation, to £39.5 million, against £39.6 million at the beginning of 1951.

"There was," says the Railway Gazette [London], in commenting on this cumulative deficit, "a working surplus for the four years 1948-1951 of £165.6 million. The total central [administrative] charges for the same period were £205.1 million, but these include capital redemption and other items 'below the line' amounting to £13.6 million. After eliminating this last amount, the deficit is £25.9 million."

All major activities conducted by the British Transport Commission except London city transport contributed to the improvement in financial results reported for 1951. In that year, says the Gazette:

"Equilibrium [between revenues and expenses] was achieved despite constantly rising levels of wages and prices. During 1951, the annual rate of expenditure suffered identifiable increases of about £70 million, the most important being in wages, coal, oil fuel and duty, steel, and other materials. On the other hand there were increases in charges made to the public, but . . . the rise in transport charges since prewar is much less than the rise in cost levels. . . .

"The gap between the rise in costs and the rise in charges made to the public has been closed in various ways. First, the commission points out, there is a smaller real remuneration of capital compared with prewar. Secondly, there have been useful increases in traffics (net traffic receipts improved by £9.7 million in 1951 over 1950). Thirdly, there has been a better distribution of public obligation, e.g., unremunerative but essential local services, between the several forms of transport. Fourthly, the amounts reserved for replacement are based mainly on historical cost and not on current cost. Above all, it is claimed by the B.T.C. that the gap has been closed as the result of important increases in efficiency and economy."

Among such "increases in efficiency and economy," are mentioned a rise in net ton-miles per freight engine-hour from 461 in 1938 to 595 in 1951; and "a continuing reduction of staff on British Railways, which, after allowing for unfilled vacancies, has resulted in substantial economy."

Total traffic handled exceeded that of any peacetime year since compilation of present statistics was begun in the 1920's.

Details of British Railways revenues and expenses and of B.T.C. operations as a whole for all four years of national control are given in the accompanying tables.

Israel.—Plans for construction of railroad lines in southern Israel are being studied by a governmental group, according to a recent issue of Foreign Commerce Weekly. Special attention, it was reported, is being given to facilities for transport of minerals.

SUMMARY OF ANNUAL REPORT OF BRITISH TRANSPORT COMMISSION

(000,000 omitted)

	1951	1950	1949	1948
Net revenue from transportation operations	£40.0	£30.3	£21.4	£36.4
Other income (docks, hotels, dining and buffet service, advertising, rents, etc.)	9.1	9.7	9.9	8.8
Total income	£49.1	£40.0	£31.3	£45.2
Interest and administration expenses	46.2	49.9	48.6	46.9
Surplus or deficit before special charges	£ 2.9	£ 9.9d	£17.3d	£ 1.7d
Special charges and capital redemption	2.8	4.2	3.5	3.0
Total net surplus or deficit	£ 0.1	£14.1d	£20.8d	£ 4.7d

d Deficit

OPERATING RESULTS, BRITISH RAILWAYS

OPERATING REVENUES:	1951	1950	1949	1948
Passenger	£107,022,507	£106,611,489	£113,962,732	£122,589,789
Freight	227,857,830	198,916,823	178,716,683	180,516,713
Mail, parcel post, parcels and other merchandise	33,051,527	30,682,761	29,011,155	29,350,896
Miscellaneous	4,791,098	3,859,225	3,797,875	3,677,998
Total	£372,722,962	£340,070,298	£325,488,445	£336,135,396
OPERATING EXPENSES (including depreciation or renewals, but not including abnormal maintenance):				
Train operation	£121,072,847	£112,600,037	£112,841,002	£113,343,442
Maintenance and depreciation of equipment	68,710,729	65,781,133	64,704,179	60,423,640
Maintenance and renewal of way and structures	53,129,408	49,936,906	49,658,333	48,799,664
Other traffic expenses	83,846,688	75,945,370	76,092,174	78,360,920
General expenses	11,010,149	9,476,767	9,531,948	8,949,993
Total	£337,769,821	£313,740,213	£312,827,636	£309,877,659
NET OPERATING REVENUE	£ 34,953,141	£ 26,330,085	£ 12,660,809	£ 26,257,737
OPERATING RATIO (per cent)	91	92	96	92

EQUIPMENT AND SUPPLIES

FREIGHT CARS

6,411 Freight Cars Delivered in June

Freight-train cars delivered in June for domestic use totaled 6,411, compared with 6,857 in the preceding month and 9,644 in June 1951, the American Railway Car Institute and the Association of American Railroads have announced. New freight-train cars ordered in June amounted to 3,264, the announcement added, and the backlog of cars on order and undelivered on July 1 was 99,615. A breakdown by types of cars ordered and delivered in June, and of cars on order on July 1, appears in the accompanying table.

Type	Ordered June '52	Delivered June '52	On Order & Undelivered July 1, '52
Box—Plain	1,550	2,077	30,191
Box—Auto	0	0	750
Flat	237	39	3,215
Gondola	100	531	21,701
Hopper	551	2,848	27,801
Covered Hopper	80	5	5,053
Refrigerator	250	244	4,293
Stock	0	0	500
Tank	369	661	5,353
Caboose	5	6	319
Other	122	0	439
TOTAL	3,264	6,411	99,615
Carbuilders	1,643	4,848	61,825
Railroad Shops	1,621	1,563	37,790

The **Atlantic Coast Line** is inquiring for from 100 to 1,000 50-ton pulpwood cars, and for from 100 to 1,500 70-ton cement-phosphate rock cars.

The **Bangor & Aroostook** has ordered 500 insulated cars from the Pacific Car & Foundry Co. at a cost of over $4,300,000. Delivery, which depends upon availability of steel, is scheduled to begin next December. The order includes 250 insulated refrigerator cars and 250 insulated box cars with underslung heaters, the latter being a multi-purpose car which can

(Continued on page 87)

(Continued from page 84)
handle both newsprint and potatoes. When these cars are delivered, a spokesman for the road said, the B&A will be the second largest railroad owner-operator of insulated cars in the country.

The **Ferrocarril del Pacifico** (formerly the Southern Pacific of Mexico), reportedly will soon order 700 freight cars and 20 locomotives in this country, according to a recent issue of Foreign Commerce Weekly. It also was reported that bids have been requested for some of the contemplated rehabilitation work on the line.

The **Toronto, Hamilton & Buffalo** has ordered 300 40½-ft. 50-ton steel box cars from the National Steel Car Corporation at an approximate cost of $2,300,000. Delivery is scheduled for April 1953.

LOCOMOTIVES

The **International Harvester Company** has ordered four 800-hp. and two 1,200-hp. diesel-electric locomotive switching units from the Electro-Motive Division of General Motors Corporation. The Chicago, West Pullman & Southern, an International Harvester subsidiary, has requested I.C.C. authority to lease the six units from its parent company (see Financial column).

SIGNALING

The **Chicago & Western Indiana** has ordered from the Union Switch & Signal Division of Westinghouse Air Brake the necessary material to install additional interlocking facilities at Roosevelt Road, Chicago, Ill. In addition to a Style C control machine, the order includes Styles H-5 dwarf and high searchlight signals, A-5 electro-pneumatic switch machines, SL-25 electric switch locks, relays, rectifiers, transformers and housings. Field installation work will be by railroad forces.

The **Missouri-Kansas-Texas** has ordered from the Union Switch & Signal Division of Westinghouse Air Brake the necessary material to install automatic signaling on approximately 11 miles of single track between Cat Spring, Texas, and Sealy. The order includes Style H-5 searchlight signals, relays, rectifiers, transformers and housings. Field installation work will be handled by railroad forces.

IRON & STEEL

The **Delaware & Hudson** has ordered 3,750 net tons of rail from the Bethlehem Steel Company.

The **Lehigh & New England** has ordered 356 net tons of rail from the Bethlehem Steel Company.

FINANCIAL

Canadian National.—*Capital Reorganization Approved.*—By unanimous action in both houses, the Canadian Parliament has approved a government sponsored bill, the terms of which were briefly outlined in *Railway Age*, June 16, page 18, providing for reorganization of the finances and capital structure of the CNR. The following statement in connection with the bill was sent to all CNR employees by Donald Gordon, chairman and president of the company, on July 7:

"The Canadian National Railways Capital Revision Act has now become law. By it, we are now given a fair chance to show the results of each year's operations in our financial statement in such a way that everyone can understand them. The burden of ancient debts incurred before the Canadian National System came into being will no longer obscure the picture. The people of Canada will be able to judge us strictly on the current record. This is what we have been waiting for these many years. Now that we have been given a fair start, without handicap and without favor, there lies upon us more than ever before a challenge to produce the very best results we can. Something, in fact, just a bit better than our best. We have been given a fair share of much needed relief but at the same time we have been put quite literally on the spot. I am sure that, if we all work together, trying to get as much business as we can and to operate as efficiently as we can, we will prove beyond doubt that there are no better railroaders anywhere. Go to it."

Chicago, West Pullman & Southern. — *Lease of Locomotives.* — This road has applied to the I.C.C. for authority to lease from its parent company, the International Harvester Company, six diesel-electric switching locomotives, including four 800-hp. and two 1,200-hp. units. All are being built by Electro-Motive Division, General Motors Corporation, and will be delivered in September. Use of the new locomotives will enable this road to dieselize completely its switching operations. The road will have an option to purchase the locomotives during the term of the lease. Meanwhile, rental payments on the six units will total approximately $40,941 a year.

Northern Pacific—Oregon-Washington Railroad & Navigation Co. (Union Pacific).—*Joint Use of Rail Line.*—The I.C.C. has granted authority to these roads to acquire joint ownership of approximately 11 miles of rail line in the McNary dam and reservoir area in Washington. Most of the trackage is being relocated by the government to replace existing lines in the flood basin area. The roads will use the new trackage jointly. There are two principal segments, one from Attalia, Wash., to Villard, 7.4 miles, and another in the vicinity of Wallula, 3.7 miles.

Port Angeles Western (Sol Duc Investment Company).—*Reorganization.*—Appointment of A. R. Truax as trustee of this road and the investment company has been ratified by the I.C.C. The reorganization proceeding is pend-in the U.S. District Court for the Western district of Washington.

Reading. — *Increases Interest in Central of New Jersey.*—Through open market purchases during May and early June, the Reading has increased its ownership interest in the CNJ from 34 per cent to 41 per cent. It now holds 188,516 shares of the two classes of CNJ stock, and has completed its buying program for the present, according to J. A. Fisher, Reading president. The strengthening of the Reading's position in the New Jersey road was reportedly undertaken to sageguard the joint Baltimore & Ohio-Reading-Jersey Central route into the New York metropolitan area.

Southern. — *Competitive Bidding Relief.*—This road and two affiliates, the New Orleans Terminal Company and New Orleans & Northeastern, have asked the I.C.C. for competitive bidding relief on a proposed $46,000,000 bond issue. Sale of the new bonds would provide funds to help pay off other bonds which mature in 1953 and 1956. The approaching maturities aggregate $89,643,000, of which $11,423,000 will be due July 1, 1953; $65,450,000 on April 1, 1956, and $12,770,000 on November 1, 1956.

The Southern said it has been advised to do part of the contemplated financing in the near future rather than delay until time closer to maturities "with the uncertainties . . . which will attend such delay." There will be some overlapping of interest charges, the road said, but by negotiating for direct sale of the new bonds the road hopes it can pay a "reasonable stand-by charge" and thus postpone actual issuance of the new bonds until needed. This transaction is the sort to which the competitive bidding process is not appropriate, the road added. It went on to say that it has not yet discussed the terms of sale of the new bonds with any prospective purchaser.

Texas & Pacific.—*New Directors.*—Estil A. Vance, president of the Fort Worth (Texas) National Bank, and Will K. Stripling, president, W. C. Stripling Company, a Fort Worth department store, have been elected to the board of directors.

New Securities

Division 4 of the I.C.C. has **authorized:**

MISSOURI PACIFIC.—To assume liability for $1,875,000 of series TT equipment trust certificates, to finance in part 10 2,250-hp. diesel-electric locomotive units. Estimated total cost of the units is $2,349,915 *(Railway Age*, June 16, page 74). Division 4 approved sale of the certificates at 99.3163 with interest at 3⅛ per cent—the bid of Salomon Bros. & Hutzler and three associates—which will make the average annual cost of the proceeds to the road approximately 3.26 per cent. The certificates, dated July 1, will mature in 15 annual installments of $125,000 each, beginning July 1, 1953. They

were reoffered to the public at prices yielding from 2.2 to 3.3 per cent, according to maturity.

VIRGINIAN.—To assume liability for $1,350,000 of series B equipment trust certificates, to finance in part 300 box cars costing an estimated $1,788,375. (*Railway Age*, June 23, page 92). Division 4 approved sale of the certificates for 99.097 with interest at 2⅝ per cent—the bid of R. W. Pressprich & Co. and four associates—which will make the average annual cost of the proceeds to the road approximately 2.78 per cent. The certificates, dated July 1, will mature in 15 annual installments of $90,000 each, beginning July 1, 1953. They were reoffered to the public at prices yielding from 1.9 to 2.875 per cent, according to maturity.

Security Price Averages

	July 8	Prev. Week	Last Year
Average price of 20 representative railway stocks	63.58	64.29	50.25
Average price of 20 representative railway bonds	93.73	93.98	91.45

RAILWAY OFFICERS

EXECUTIVE

Richardson Heads Rutland

Lawrence Richardson, who has been elected president of the Rutland at Rutland, Vt. (*Railway Age*, July 7, page 15), was born at Shelbyville, Ky., on July 11, 1889, and attended Cornell University (M.E., 1910) and the University of Illinois (1908-1909). Mr. Richardson entered railroad service in 1907 as a regular apprentice with the Pennsylvania at Altoona and was with the PRR mechanical department for 10 years. He joined the Boston & Maine in 1926 as assistant to the chairman of the executive committee, and later served

Lawrence Richardson

successively as assistant to president, mechanical superintendent, chief mechanical officer and mechanical assistant to vice-president and general manager. In 1947 Mr. Richardson was appointed mechanical consultant of the B&M and the Maine Central, and also assistant general manager of the New York, Susquehanna & Western. In September 1951 he joined the Rutland as consultant in the operating and mechanical departments.

Charles D. Cowie, vice-president and treasurer of the CANADIAN NATIONAL, will retire this month after more than 40 years of service with the system. Mr. Cowie was born in Scotland on July 25, 1887. He came to Canada in 1908 and entered railroad service in May 1910 as a clerk on the Canadian Northern (now CNR), at Toronto, and later was cashier there. During 1916 and 1917 he was engaged in special work in connection with the Royal Commission appointed to make

Charles D. Cowie

a valuation of and inquiry into the affairs of the Canadian Northern. In 1918 he became assistant to vice-president of the CNR at Toronto; in 1923, assistant to vice-president at Montreal; in 1932, treasurer; and since June 1945 has been vice-president and treasurer of the CNR and of Canadian National Steamships as well as treasurer of Trans-Canada Air Lines. Mr. Cowie is a former vice-president of the Treasury Division of the Association of American Railroads.

Loyd J. Kiernan, manager of special studies of the public relations department, ASSOCIATION OF AMERICAN RAILROADS, has been relieved of all duties in that department, to serve as executive secretary of the Organizing Committee, Eighth Pan American Railway Congress. The congress is to be held in Washington and Atlantic City, June 12-25, 1953 *Railway Age*, June 23, page 86, and June 30, page 14).

FINANCIAL, LEGAL & ACCOUNTING

Walter A. McClean, assistant auditor of freight traffic of the BALTIMORE & OHIO, at Baltimore, has been appointed auditor of freight traffic, succeeding **Harry Bransky,** who has retired after 45 years of service.

Mr. Bransky entered the accounting department of the B&O in 1907. He advanced through various positions and in 1937 was promoted to head clerk. Six years later he was promoted to assistant auditor of freight traffic and two months later, in October 1943, was appointed auditor of freight traffic.

Mr. McClean started with the railroad as messenger at Camden Station in 1907. In 1910 he was transferred to the office of the auditor of merchandise receipts as clerk, becoming head clerk in that office in 1920. In 1943 he was promoted to assistant to auditor of freight traffic and in 1949 became assistant auditor of freight traffic.

Richard E. Keefer has been appointed secretary of the Finance, Accounting, Taxation and Valuation Department of the ASSOCIATION OF AMERICAN RAILROADS. He succeeds the late **Edward R. Ford,** and will serve also as secretary of the Accounting and Treasury Divisions of the A.A.R.

OPERATING

James G. Lais, superintendent of the ALIQUIPPA & SOUTHERN, has been appointed general superintendent at Aliquippa, Pa., succeeding **W. C. Van Blarcom,** former vice-president, operations, retired. **Merritt S. Rose** has been appointed assistant general superintendent.

H. F. Walker has been appointed assistant general superintendent transportation of the Central region of the CANADIAN NATIONAL at Toronto, in which capacity he will have direction over all matters pertaining to l.c.l. operation, station services and weighing, loss and damage prevention (l.c.l. and carload), and car loadings.

P. J. King, superintendent of transportation of the RAILWAY EXPRESS AGENCY at Chicago, has been appointed general superintendent of transportation at the same point.

TRAFFIC

E. H. Bishop, chief clerk in the passenger tariff bureau of the CANADIAN NATIONAL, has been appointed chief of the tariff bureau, with headquarters as before at Montreal.

John F. Gibfried, export-import agent in the foreign freight department of the CANADIAN PACIFIC at New York, has been transferred to Chicago. He is succeeded at New York by **J. P. Yafcak,** chief clerk to foreign agent at New York. **G. W. Rosco,** export- import agent at Montreal, has been transferred to New York with the same title.

A. N. Anderson, assistant passenger traffic manager of the CHICAGO GREAT WESTERN, has been appointed passenger traffic manager, succeeding **R. A. Bishop,** who has retired.

George H. Rehm, assistant freight traffic manager for the BURLINGTON, has been appointed freight traffic manager — rates and divisions, succeeding **George A. Hoffelder,** who has retired. **Robert E. Barr,** general freight agent, succeeds Mr. Rehm. **Clarence**

Replacement Parts will continue to be available for your *Elesco Equipment on Steam Locomotives

***includes parts for "American" multiple-valve throttles and "Bradford" throttles.**

New and remanufactured Elesco superheater units have return bends that are free of internal or external weld ridges...ridges that cause unsafe tubing temperatures. When superheater units need heavy repairs, send them to our plant for remanufacture.

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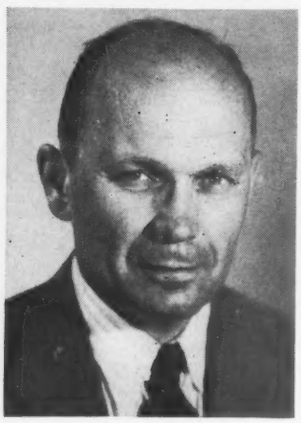
E. Larsen, assistant general freight agent, succeeds Mr. Barr.

William L. Huggins, Jr., traffic manager of the ST. LOUIS-SAN FRANCISCO at Washington, D. C., has been appointed to the newly-created post of executive representative there. **T. R. Mappes,** assistant traffic manager, succeeds Mr. Huggins as traffic manager. Mr. Huggins was born at Emporia, Kan., and attended Washburn College in Topeka and the University of Kansas. He was employed on a number of newspapers before entering Frisco service in 1925. From March 1925 to December 1932 he was director of publicity and editor of the Frisco employees' magazine. He became traffic manager at Oklahoma City in 1933 and at Kansas City in 1934. In 1945, on his return from service in the Navy, he went to Washington as special representative for the chief traffic officer. Mr. Huggins has been traffic manager at Washington since 1946.

Mr. Mappes entered railroad service in 1925 as a stenographer-clerk for the Pennsylvania at St. Louis. After holding various traffic posts, he joined the Frisco in 1942 as passenger representative at Washington and later became general agent there. In 1946 he was appointed assistant traffic manager.

MECHANICAL

J. D. Sylvester, assistant electrical engineer of the CANADIAN NATIONAL, has been appointed electrical engineer at Montreal. Mr. Sylvester was born at Star, Alta., and was graduated from



J. D. Sylvester

the University of Alberta in 1938 (B.S. in E.E.). He joined the CN the following year as an engineering draftsman at Montreal and in 1942 was appointed assistant electrical engineer.

H. E. Brakke, assistant to mechanical engineer for the NORTHERN PACIFIC, has been appointed mechanical engineer, succeeding **Fred O. Young,** who has retired after 46 years of service. **E. C. Estes** succeeds Mr. Brakke.

L. S. Randolph has been appointed supervisor of locomotive performance of the NEW YORK CENTRAL at Buffalo, N.Y., succeeding **C. S. Hulbert,** promoted.

OBITUARY

Eldred S. Taylor, 63, system engineer of signals of the CANADIAN PACIFIC at Montreal, died on June 28 in the western division of Montreal General hospital, after a short illness. Mr. Taylor was born on June 20, 1889, at Susquehanna, Pa., and entered railroad service in 1905 as a telegraph operator and train dispatcher on the Delaware & Hudson, in which capacity he served until 1910. After a short period of service with the Hall Signal Company of Garwood, N. J., he joined the CP in November 1910 as signal inspector. He was appointed assistant to signal engineer in May 1912, signal supervisor of the Quebec district in February 1915, and signal engineer of the Eastern lines at Montreal in May 1926, transferring to Toronto in 1939. He became engineer of signals of the system in 1946. At the time of his death he was chairman of the Signal section of the Association of American Railroads.

John Murray Gibbon, 77, who retired as general publicity agent of the CANADIAN PACIFIC in 1945, following a career of 38 years with the road, died on July 2 at Ross Memorial Hospital, Montreal, after a short illness.

Order-Board Basis Proposed For Material Allocations

The National Production Authority has received from its Railroad Advisory Committee a recommendation proposing that "available materials for the construction of freight cars and locomotives be allocated in accordance with the condition of order boards." The recommendation was made at a July 8 meeting of the committee, according to an N.P.A. press release reporting on the closed session.

As the release put it, the committee members, who are railroad officers, "contended that N.P.A.'s practice of allocating to companies without orders on their boards results in the production of less units than would be possible if all available materials were allocated against existing orders." On the other hand, N.P.A. representatives at the meeting were reported as having said that the order1board plan "would require all orders to be booked about nine months in advance, and might greatly injure some railroads and freight car and locomotive builders."

The committee also recommended that materials for rail relays be removed from inventory control "to permit railroads to accumulate sufficient materials for the laying of track in a properly programmed method." In the discussion of this proposal it was brought out that N.P.A. is considering issuance of an order to require increased use of "relay" rails for sidetracks, switching tracks, etc." It has been estimated that such an order "would provide 25,000 to 30,000 tons of additional new rail each quarter for the railroads."

The N.P.A. representatives also reported that fourth-quarter allotments of steel to the railroad industry will be restricted largely to taking care of advance allotments. "Because of large carryovers from the second and third quarters," the press release added, "about 65 per cent of the allotment will be used to cover these carryovers, leaving only about 35 per cent for new allotments. This may be done in an effort to eliminate carryovers in the first quarter of 1953."

Meanwhile, the railroad committee recommended that fourth-quarter allotment tickets be issued under the Controlled Materials Plan "as if no steel strike were in progress." They contended that such a plan will make it possible to obtain steel more quickly than would otherwise be the case after the strike is settled. As to the latter, the N.P.A. representatives said the struck mills will need two weeks for rescheduling their orders before new orders can be accepted. They put the loss in steel production at 11 million tons, "roughly one-fourth of which would have been for defense production."

Fast Write-Offs for Tank Barges Will End July 15

No certificates authorizing accelerated amortization of tank barges for income-tax purposes will be granted after July 15. This "cut-off" date, which will mark the end of such fast write-offs, "unless a shortage of tank barges develops in the future," was fixed by Defense Transport Administrator James K. Knudson.

The Defense Production Administration actually issues the certificates, upon recommendation of D.T.A. All applications filed with D.P.A. prior to the cut-off date "will be considered," Mr. Knudson said.

"As of June 15," he added, "applications for tax amortization certificates for 334 new barges of all types had been referred to the D.T.A. for pro-

(Continued on page 95)

(Continued from page 90)
cessing. Those applications and those received prior to July 15 should provide sufficient tank barges to meet the present requirements for national defense."

NP Yardmen Stick with B.R.T.

The Brotherhood of Railroad Trainmen will continue as collective-bargaining representative of Northern Pacific yardmen, according to results of a recent election, which has been certified by the National Mediation Board. The

News Briefs . . .

. . . Junior travelers are getting added attention from the dining car department of the Rock Island. Under a new program just inaugurated, the young traveler finds special junior-size silverware and an absorbent paper bib, decorated with a comic diesel locomotive, when he is seated at the table. He may choose from small-size sandwiches cut to Mother Goose character designs or junior meals at half price. For the hearty eater who wants more, the Rock Island will provide a second portion without extra charge.

. . . Study of potato blights which have cost growers thousands of dollars annually will be continued for a second year through a Union Pacific fellowship awarded to G. D. Easton, a graduate student at the University of Idaho. Last year, the railroad's fellowship was awarded to another graduate student at the university, Richard Ohms, whose study of the "potato leaf roll" brought out methods by which that blight may be controlled. Mr. Easton will conduct his research on the potato disease known as "necrotic calico."

. . . "Adam to Atom" will be the title of the musical pageant to be staged at the Museum of Science and Industry, Chicago, in connection with the Centennial of Engineering celebration, which will also feature a convocation of some 30,000 leading engineers from all over the world, plus a special exposition of engineering achievement to be staged by the museum. Major Lenox R. Lohr, who headed the Chicago Railroad Fair organization in 1948 and 1949, is president of the centennial. Helen Tiecken Geraghty, director of the railroad fair's "Wheels A'Rolling" pageant, is directing "Adam to Atom" and her present staff includes many members of the former railroad fair troupe. The one and one-half hour show will be presented two or three times daily on the museum grounds, beginning July 12. It will depict "the panorama of mankind's advance by the utilization of engineering and scientific achievements."

Preferred power on portable fire fighting pumps and floodlight electric plants — the world's most widely used single-cylinder gasoline engines on machines, tools, appliances used by municipalities, industry, construction, railroads, oil fields, and on equipment for farm and home.

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In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

B.R.T. defeated the Switchmen's Union of North America by a vote of 862 to 743.

O'Neill Becomes N.M.B. Chairman for Fiscal '53

Francis A. O'Neill, Jr., has been designated by the National Mediation Board as its chairman for the current fiscal year, which began July 1. The designation was pursuant to the board's policy of rotating the chairmanship annually among its three members.

The chairman for the 1952 fiscal year, which ended June 30, was Leverett Edwards, who continues as a member of the board.

P.M.G. Wants New Boost On Fourth-Class Mail

Postmaster General Donaldson has petitioned the Interstate Commerce Commission for another rate increase on fourth-class mail. Exact amount of the increase was not stated. The department said it is analyzing the cost of this service, and will formulate specific rates for submission to the I.C.C. about January 1, 1953.

Purpose of the new parcel post increase, according to Mr. Donaldson, is to put the service on a self-supporting basis. Congress in 1950 ordered the Post Office Department to take such action.

An I.C.C.-approved increase in fourth-class mail rates became effective October 1, 1951. That increase was authorized by the commission in a May 11, 1951, order, but since that time changed conditions have kept parcel post from becoming self-supporting. Increased railway mail pay and a wage increase for postal workers have become effective since the previous rate boost was approved.

This advance filing for a new rate hike is required under rulings from the Comptroller General, Mr. Donaldson told the I.C.C. The present petition asks the I.C.C. to institute such proceedings as may be necessary "to give its consent to the establishment of increased rates on fourth-class mail and such other reformations as may be necessary to insure receipt of revenue from fourth-class mail sufficient to pay the cost of such service."

Tank Cars Without AB Brakes to Be Inventoried

Companies owning 100 or more tank cars have been called upon by the Defense Transport Administration to submit an inventory of tank cars not equipped with AB brakes as of July 31. D.T.A. Form 39, on which the involved car lines make monthly reports, has been revised to provide the desired inventory.

The information, D.T.A. explained, is desired because of the Interstate Commerce Commission's order under which all unequipped cars must be removed from interchange service by De-

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*Paducah — 418 Guthrie Building
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Portland 3-1761 • H. J. Scully

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Springfield 7-4373 • H. O. Edoff
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Worcester 6-4311 • H. G. Rappel

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Temple 1-5500 • C. R. Carlson
W. E. Watson
P. L. Gundy
*Flint 6 — 2424 Kansas Ave.
Flint 2-4101 • E. C. Bryden
Grand Rapids 2 — 432 Monroe Ave., N.W.
Glendale 1-2561 • H. G. Cook
*Lansing 10 — 421 E. Elm Street
Lansing 4-5434 • W. T. Bronson

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Melrose 6645 • F. A. Sjogren
*Minneapolis 15 — 824 South Fourth St.
Geneva 1621 • E. J. Aubrecht
*St. Paul 1 — 464 Robert St.
Cedar 7491 • L. E. Luckman

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D. M. Antrim
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Bristol — 29 Fifth Street
South 4415 • R. L. Coward
Chattanooga 1 — 1222 Carter Street
Chattanooga 6-5624 • J. R. Feeney
Knoxville 30 — Henley St. & Union Ave.
Knoxville 3-6171 • C. C. McGraw
*Memphis 3 — 484 South Front Street
Memphis 37-3421 • J. W. Horne
*Nashville 3 — 125 16th Ave. No.
Nashville 6-7161 • Herschel Hall

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Amarillo 2-6778 • L. P. Bell
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Austin 8-5674 • George W. Cox
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El Paso 3-7561 • C. A. Steinmann
*Fort Worth 7 — 1107 Foch St.
Edison 4523 • Vernon Young
*Houston 3 — 1702 Cullen Blvd.
Atwood 8-4571 • W. P. Worley, Jr.
San Antonio 8 — 1401 N. Hackberry St.
Fannin 6274 • J. Emmett House

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Salt Lake City 9-8771 • R. H. Lee

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Norfolk 2-2727 • L. E. Burford
T. A. Young
*Richmond 19 — 10 S. 6th St.
Richmond 7-3491 • E. C. Toms
*Roanoke 5 — 601 Salem Ave.
Roanoke 3-3615 • W. E. James

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Mutual 0123 • E. C. McEachron
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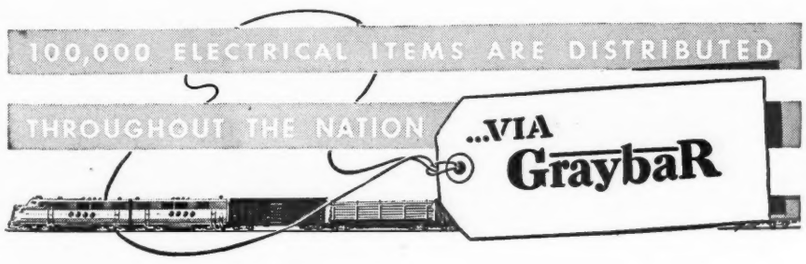


cember 31. D.T.A., its explanation added, "must know the number of tank cars which would have to be scrapped or taken out of service."

Federal-Aid Road Act Signed by President

President Truman has signed the recently-enacted federal-aid highway act which authorizes appropriations of $575 million for the so-called federal-aid highway system during each of the two fiscal years ending June 30, 1954, and June 30, 1955. This compares with $500 million authorized for the current fiscal year which was provided for in legislation enacted in 1950.

In addition to the $575 million noted above, the new act, which is Public Law 413, authorizes, for each of the two fiscal years, other highway appropriations totaling $149.2 million. These would include $50 million for access roads to defense facilities; $45 million for forest highways, roads and trails; $11.5 million for parkways, including $1.5 million to make a $14.5-million project out of the Baltimore-Washington Parkway for which previous authorizations totaled $13 million; $10 million each for roads within national parks and within Indian reservations; and $10 million for emergency repairs and reconstruction work.

The yearly federal-aid-system authorizations of $575 million include $247.5 million for the "primary" system; $165 million for the "secondary" system; $137.5 million for roads in urban areas; and $25 million for the "national system of interstate highways."

May Employment

Railroad employment increased 1.04 per cent—from 1,229,835 to 1,242,620—between mid-April and mid-May, according to the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. The mid-May total was 3.68 per cent below that of May 1951.

The index of employment, based on the 1935-1939 average as 100, was estimated at 122.2 for May, compared with 122.5 for April and 126.9 in May of last year.

May 1952 employment was above that of April in three of the seven groups. The largest increase, 6.98 per cent, was in maintenance of way and structures employees. Other increases amounted to 0.71 per cent for train and engine service employees, and 0.07 per cent for executives, officials and staff assistants.

The largest decrease from April to May occurred in the maintenance of equipment and stores group, where the number of employees dropped 1.09 per cent. The smallest decrease was 0.44 per cent, in the group embracing professional, clerical and general employees.

Compared with May of last year, there were fewer employees in all

groups except executives, officers, and staff assistants. The latter increased 0.68 per cent. Decreases ranged from 6.49 per cent in the maintenance of equipment and stores group to 0.19 per cent in transportation employees (yardmasters, switch-tenders, and hostlers).

PRR Diner Employees Receive Certificates

Fifty-three supervisory employees of the Pennsylvania's dining car department were awarded certificates by New York University on June 24 attesting to completion of a 10-week course of study in human relations. Sidney N. Phelps, PRR manager of dining car service, said the supervisors were part of a large group of supervisory employees in all parts of the road's system who are studying methods to improve relationships with men who look to them for guidance in their jobs.

"We believe this activity," Mr. Phelps added, "is of particular importance in our dining car service, where so many employees come in direct contact with the traveling public and where the passenger's impressions of the food and service in the dining car may well be remembered after other details of the trip are forgotten."

Among those attending the dinner at which the certificates were presented were Fred Carpi, PRR vice-president—traffic; E. R. Comer, passenger traffic manager; J. E. Kennedy, manager of employee relations; and Mr. Phelps.

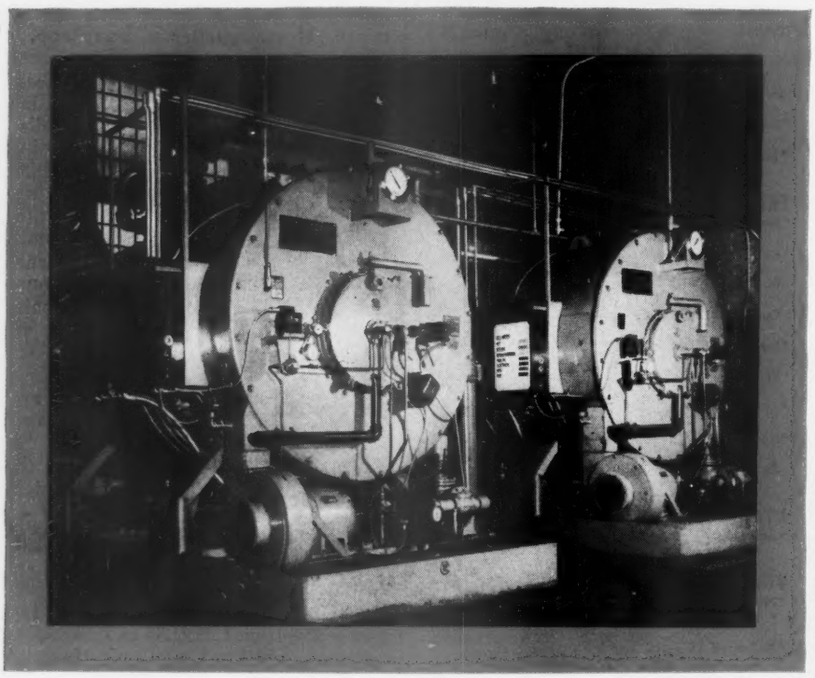
Boy Scouts Honor Wayne Johnston

A special award has been presented to Wayne A. Johnston, president of the Illinois Central, by the Boy Scouts of Chicago, in recognition of his part in a $300,000 fund-raising campaign. Mr. Johnston is currently serving as president of the Chicago Boy Scout Council and served as chairman of the recently completed campaign.

Amortization Certificates

Certificates of necessity for accelerated tax amortization of facilities were granted to 35 railroads during the period from May 30 through June 12, the Defense Production Administration has announced.

Largest of the certificates went to the Pennsylvania and New York Central. The former was authorized to write off in five years 40 per cent of facilities costing $13,324,475. The NYC was



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Here's tops in economy! **The busy Kentucky & Indiana Terminal Railroad installed two 250 hp. AMESTEAM Generators and two electric compressors to service its Louisville roundhouse, shops and yards. This new power plant is netting this important switching railroad an annual saving of $15,000 to $20,000, equivalent to one-third the cost of the installation.**

The AMESTEAM Generator is completely automatic; no boiler room attendants are required. Burns all types of fuel oil from Bunker C down to No. 1, as well as natural gas. Better than 80% thermal efficiency is guaranteed. Single units from 10 to 600 hp. Design pressure — 15 to 200 lbs.

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JOAQUIN NUNEZ BRIAN (left), of Buenos Aires, secretary general of the Permanent Commission of the Pan-American Railway Congress Association, presents William T. Faricy, chairman of the United States National Commission in the association and president of the Association of American Railroads, with a section of the first railroad rail used in Argentina. The rail, laid in 1857, is a gift of the Pan-American Railway Association. Mr. Nunez Brian is in the United States conferring with Mr. Faricy and others concerning plans for the Eighth Pan-American Railway Congress to be held in Washington, D. C., and Atlantic City, N. J., in June 1953 (*Railway Age*, June 23, page 86).

More WAUKESHA EQUIPPED gallery cars for Chicago suburban service

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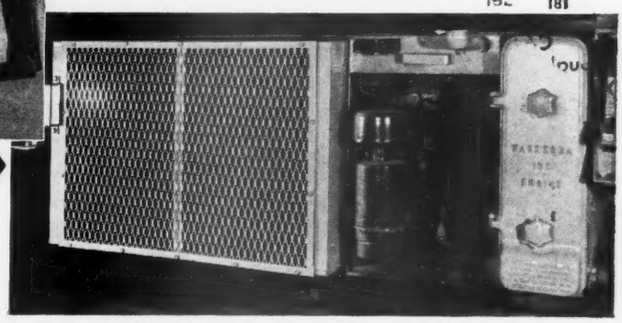
● In ordering ten more gallery-type cars, the newest and finest in modern suburban transportation, the Burlington Lines specify that each car be equipped with two 7-8 ton Waukesha Railway Ice Engine Units. These additional 20 Waukesha units, like the 60 Ice Engines now in service on the original 30 gallery-type suburban cars bought by the Burlington, insure clean, cool, and quiet comfort for passengers—even in the hottest, stickiest weather. Get Bulletin 1179.



Waukesha propane-powered Ice Engine

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Largest builders of mobile engine-driven Refrigeration and Generator Equipment

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authorized fast write-off for 55 per cent of $12,213,500.

Other certificates went to roads listed below. The percentage figure in each case indicates the amount that can be written off in five years.

Atlanta & West Point, $25,396, 40 per cent.

Atlantic Coast Line, $848,000, 55 per cent; and $961,851, 40 per cent.

Bessemer & Lake Erie, $3,285,000, 70 per cent.

Beaumont, Sour Lake & Western, $312,580, 40 per cent.

Chesapeake & Ohio, $9,060,500, 50 per cent; and $300,000, 40 per cent.

Chicago, Burlington & Quincy, $1,500,000, 70 per cent.

Chicago, Milwaukee, St. Paul & Pacific, $1,647,005, 40 per cent.

Cincinnati, New Orleans & Texas Pacific, $729,755, 40 per cent.

Delaware, Lackawanna & Western, $750,000, 70 per cent.

Detroit, Toledo & Ironton, $738,294, 70 per cent.

Duluth, Missabe & Iron Range, $1,100,288, 40 per cent.

Duluth, South Shore & Atlantic, $359,112, 55 per cent.

Illinois Central, $8,400,000, 70 per cent.

Erie, $304,490, 40 per cent; and $1,519,980, 50 per cent.

Georgia Northern, $32,692, 40 per cent.

Great Northern, $355,575, 40 per cent.

International-Great Northern, $1,251,234, 55 per cent.

Lehigh Valley, $36,015, 40 per cent; $400,212, 60 per cent; and $112,800, 70 per cent.

Los Angeles & Salt Lake $1,434,782, 40 per cent.

Louisville & Nashville, $1,012,087, 40 per cent; and $889,100, 70 per cent.

Missouri-Kansas-Texas, $2,150,000, 55 per cent.

Oregon-Washington Railroad & Navigation Co., $543,077, 40 per cent.

Pennsylvania (lessee of Pittsburgh, Ft. Wayne & Chicago), $151,657, 50 per cent; and $692,958, 40 per cent.

Pittsburgh & Lake Erie, $1,045,000, 55 per cent.

Richmond, Fredericksburg & Potomac, $193,000, 40 per cent.

Savannah & Atlanta, $151,788, 55 per cent.

Seaboard Air Line, $8,740,332, 55 per cent.

Southern, $9,900,000 70 per cent; and $150,612, 40 per cent.

Spokane, Portland & Seattle, $105,997, 40 per cent.

St. Joseph & Grand Island, $236,107, 40 per cent.

St. Louis, Brownsville & Mexico, $1,596,498, 55 per cent.

Texas & New Orleans, $78,383, 40 per cent.

Union Pacific, $1,395,340, 70 per cent; $257,150, 50 per cent; and $1,058,418, 40 per cent.

Virginian $240,000, 40 per cent.

As this list of certificates was issued, D.P.A. announced that no more industrial expansion requiring tax amortization should be planned without prior consultation with the government agency responsible for the particular industry involved. In the case of transportation, this is the Defense Transport Administration.

D.P.A. said expansion goals have been, or will be established for most materials, products and facilities. Many of the goals either are filled or applications for tax amortization sufficient to fill them are in the hands of government agencies.

MULE-HIDE CANVAS CAR ROOFING is applied rapidly in a single operation and the car is ready to roll—no delay for painting or drying. Saves labor, time and maintenance costs on freight, passenger and caboose cars. Gives long service.

MULE-HIDE PLASTIC CAR ROOFING—tough, weather-resistant. Withstands weaving and pulling of cars in motion. Resists tearing and punctures.

MULE-HIDE INSULATING PAPER—high insulation value, long life, will not dry out or crack under refrigeration.

MULE-HIDE CAB CURTAIN CANVAS—Wears 3 to 4 times longer than ordinary duck. Thorough asphaltic treatment prevents decay, resists gases, tearing and puncturing. Reduces fire hazard. No painting or drying required.

MULE-HIDE Roll Roofing, Asphalt Shingles and Waterproofing materials have been protecting railroad properties and reducing maintenance costs for more than 40 years.

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Tariff Study Group Sends Out Ninth Questionnaire

The Railroads' Tariff Research Group has sent out the ninth of the series of questionnaires whereby it is seeking views of interested parties on ways and means of simplifying and otherwise improving tariffs.

Questionnaire No. 9 asks this question: Where should the explanation of general reference marks and the explanation of abbreviations be shown in the tariff proper and in supplements?

Waybill Study

The second of the series of table-and-chart studies showing state-to-state distribution of 1950's carload tonnage by major commodity groups has been issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. It is Statement No. 5219, and covers the "East South Central" group of states, i.e., Alabama, Kentucky, Mississippi, and Tennessee.

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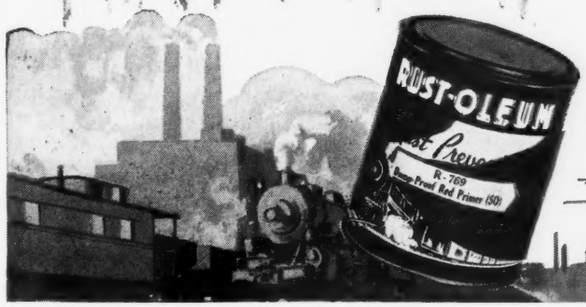

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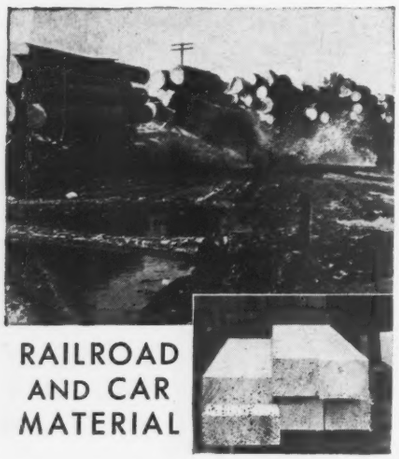

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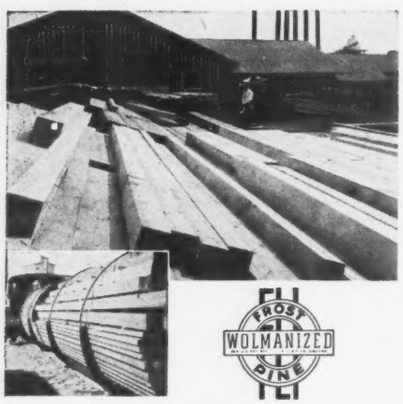

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Current Publications

TRADE PUBLICATIONS

Mercury Fork Trucks—Tractors—Trailers (Bulletin 300). 44 pages, illustrations. Mercury Manufacturing Company, 4044 S. Halsted st., Chicago 9.

This product catalog and reference book covers Mercury's entire line of current model tractors, trailers, fork lift trucks, platform lift trucks and load carrying trucks. The three major categories in the catalog are the trackless-train system, the fork truck-pallet system and the lift truck-skid system.

P-A-X Business Telephone Systems (Circular 1735). Automatic Electric Sales Corporation, 1033 W. Van Buren st., Chicago 7.

Intended for engineers, architects and administrative officers, this circular discusses the interoffice telephone communication system known as P-A-X—an automatic dial system. The system can vary in size from 10 telephones handling two conversations at once up to 200 telephones and any number of simultaneous conversations. The circular describes various installations.

PAMPHLETS

This Is the Reading. 84 pages, illustrations. The Reading Company, Reading Terminal, Philadelphia 1, Pa.

With a minimum of text and a maximum of excellent illustrations, both halftone and line, this booklet covers the whole field of Reading territory, facilities, service, activities and history. (*Railway Age*, June 16, page 12.)

Metropolitan Transportation Telephone Tickler. 240 pages. New York Journal of Commerce, 63 Park row, New York 15. 50 cents.

The 1952 edition covers 1,500 firms and over 5,000 individuals prominent in the transportation industry. It lists steamship companies and agents, air lines, railroads, custom-house-license-truckers, foreign freight forwarders, and warehouses. Designed to help shippers find the right man to contact in a particular problem, the desk-size volume also contains a listing of New York City piers used by steamship companies, and the addresses and phone numbers of foreign consultants in New York. A classified index is included.

An Illustrated and Descriptive History of the Nigerian Railway, by John Stocker. 36 pages, illustrations, maps. Nigerian Railway, Ebute Metta, Nigeria. Six pence.

Issued to commemorate the 50th anniversary of the Nigerian Railway, this pamphlet outlines the history and development of the railway. Appendices which follow list the dates of the opening of the various parts of the line and the mileage of each, major bridges, operating statistics for intermittent years from 1902 to 1951, main line locomotives used, and the names of the general managers and the periods during which they served. A

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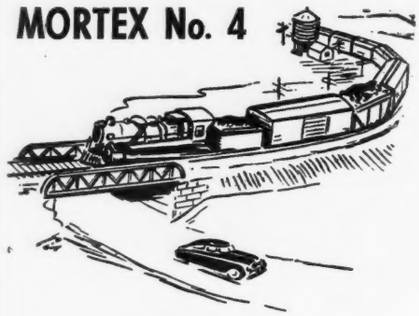

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profile map and a map showing the railway and principal commodities are included.

Air Transport Facts and Figures, 13th Edition, 1952. 19 pages. Air Transport Association of America, 1107 Sixteenth st., N.W., Washington 6, D. C. Free.

The year 1951 was the silver anniversary year for scheduled airlines. The current issue of "Facts and Figures" reviews developments and progress in the industry and then proceeds to a statistical review of 1951 and preceding years, with numerous tables covering such items as freight and passenger traffic, earnings, penetration into the first class domestic travel market, mail revenues and payments, personnel, accidents and safety.

Canada's Proposal to Construct Independently the Great Lakes-St. Lawrence Seaway and Power Project. 16 pages. Chicago Association of Commerce and Industry, One LaSalle st., Chicago 2. 25 cents.

Published as a supplement to the association's earlier book, "The Great Lakes-St. Lawrence Seaway and Power Project," this pamphlet is an informal discussion by Arthur H. Schwietert, traffic director, and Leverette S. Lyon, chief executive officer, of the association, of the issues raised by Canada's proposed independent undertaking of the project. The pamphlet answers such questions as:

Would we "lose control" if Canada builds a seaway?

Would Canada charge us unfair and excessive tolls for use of the seaway?

Would construction by Canada affect the security issues involved?

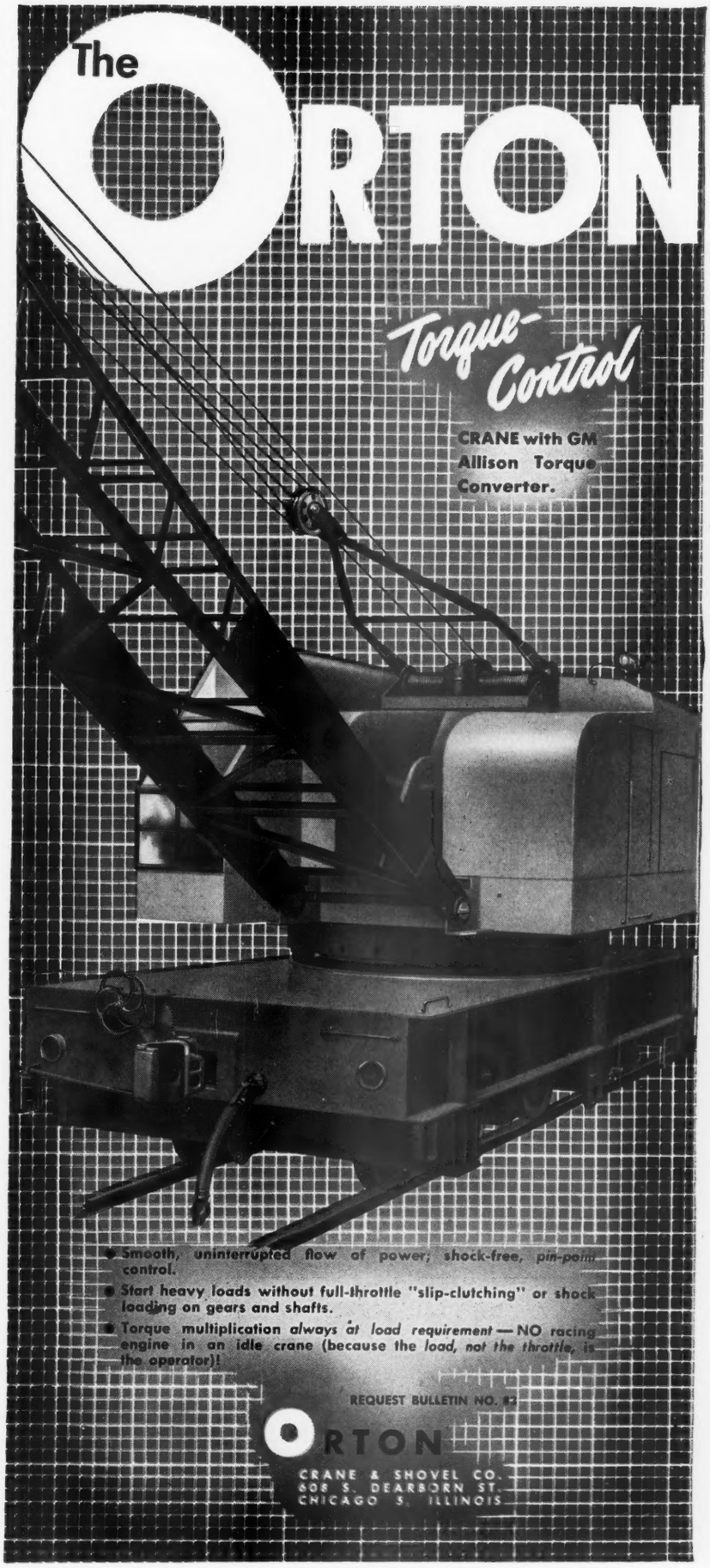
Would construction by Canada affect the economic issues of the seaway as a transportation facility?

The discussion concludes that the possibility of Canada's proceeding alone adds "no significant reason" for changing the conclusions of the original book, i.e., that the project is "unsound from the point of view of national defense and offers no prospect of being self-liquidating as a transportation agency."

FILMS

Let's Go Fishing and The Big Island. 16 mm., sound, color, 20 minutes. Canadian National Railways, 630 Fifth ave., New York 20. Available on loan without charge.

"Let's Go Fishing" is a fast-moving film of sport fishing in Canada from Newfoundland to British Columbia. It is filled with action throughout and is a cinematic guide for all types of fishermen, pointing out the best places for everything from record-breaking tuna to pan-sized brook trout. "The Big Island" is Newfoundland, Canada's newest province. The film shows Newfoundland's beautiful and rugged shoreline and gives glimpses of the interior forest and the great rivers known to fishermen and hunters as well as to the men who produce pulpwood. It goes from fishing villages to the city of St. John's; looks into an iron mine, and follows the logs through the world's largest paper mill at Corner Brook.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Freight Operating Statistics of Large Railways — Selected Items

Region, Road and Year		Miles of road operated	Train-miles	Locomotive-Miles: Principal and helper	Locomotive-Miles: Light	Car-Miles: Loaded (*thousands*)	Car-Miles: Per cent loaded	Ton-miles (*thousands*): Gross excl.locos & tenders	Ton-miles (*thousands*): Net rev. and non-rev.	Road-locos. on line: Serviceable Unstored	Road-locos. on line: Serviceable Stored	Road-locos. on line: B.O.	Road-locos. on line: Per cent B.O.
New Eng. Region	Boston & Maine	1952	1,690	280,323	290,598	15,517	11,182	63.0	716,463	293,645	88	10	7	6.7
		1951	1,691	290,349	298,637	13,272	11,699	70.3	716,790	295,922	89	5	5	5.1
	N. Y., N. H. & Htfd	1952	1,764	307,879	308,048	16,049	12,463	70.3	761,828	318,998	91	4	8	7.8
		1951	1,766	324,306	324,616	20,440	12,897	67.6	812,699	341,510	99	..	11	10.0
Great Lakes Region	Delaware & Hudson	1952	793	253,790	289,337	19,346	11,463	69.1	810,361	426,442	79	16	46	32.6
		1951	793	271,231	315,234	24,391	12,132	69.9	845,230	451,745	163	26	27	12.5
	Del., Lack. & Western	1952	964	291,061	315,216	29,096	13,592	71.2	879,296	402,426	77	11	7	7.4
		1951	966	295,634	321,785	33,741	13,933	71.9	882,440	400,677	82	2	42	33.3
	Erie	1952	2,242	620,155	627,133	32,277	35,883	69.7	2,218,506	946,403	165	12	10	5.3
		1951	2,245	695,540	708,166	36,216	37,833	67.8	2,359,957	977,078	218	16	19	7.5
	Grand Trunk Western	1952	952	263,102	267,180	2,504	8,899	63.2	605,960	261,281	58	..	12	17.1
		1951	974	295,449	302,388	3,040	11,073	67.1	724,074	315,621	63	..	13	17.1
	Lehigh Valley	1952	1,207	247,002	251,240	10,967	12,482	70.3	823,154	392,708	35	3	..	..
		1951	1,216	257,581	272,662	25,770	13,130	71.0	841,282	389,832	57	2	6	9.2
	New York Central	1952	10,653	2,782,961	2,909,282	139,722	103,312	61.9	7,402,380	3,312,107	916	60	333	25.4
		1951	10,677	3,320,671	3,516,648	185,130	125,064	63.4	8,747,319	3,941,900	1,041	13	346	24.7
	New York, Chic. & St. L.	1952	2,161	834,550	857,874	11,912	32,596	66.0	2,261,127	1,019,478	200	10	38	15.3
		1951	2,161	901,805	923,027	15,853	34,542	67.3	2,357,177	1,056,868	215	2	35	13.9
	Pitts. & Lake Erie	1952	221	89,493	92,098	97	3,930	64.3	331,211	196,799	37	..	11	22.9
		1951	221	100,603	103,281	267	4,172	68.5	345,405	210,686	29	..	13	31.0
	Wabash	1952	2,381	562,866	567,819	8,799	25,099	70.9	1,569,810	667,222	104	29	36	21.3
		1951	2,381	607,442	612,270	9,571	25,835	71.7	1,591,297	284,507	133	2	78	36.6
Central Eastern Region	Baltimore & Ohio	1952	6,082	1,670,124	1,892,417	206,250	67,947	64.5	5,115,571	2,523,344	598	66	151	18.5
		1951	6,083	1,951,117	2,242,659	234,823	74,928	64.8	5,658,666	2,800,730	683	68	183	19.6
	Central of New Jersey	1952	411	72,171	72,747	3,945	2,777	67.8	205,794	108,766	36	..	6	14.3
		1951	410	78,184	78,402	3,568	2,987	67.6	216,022	110,441	40	1	8	16.3
	Central of Pennsylvania	1952	207	65,904	72,860	11,508	2,593	65.8	200,024	105,297	31	5	6	14.3
		1951	210	73,213	81,049	14,066	2,859	71.3	201,277	107,302	32	..	16	33.3
	Chicago & Eastern Ill.	1952	868	133,746	133,746	3,482	5,191	64.3	355,112	165,820	28	..	2	6.7
		1951	886	133,743	133,743	3,213	5,752	68.1	375,463	178,423	28	..	1	3.4
	Elgin, Joliet & Eastern	1952	236	95,279	96,449	14	3,337	63.8	266,397	143,661	39	..	3	7.1
		1951	238	97,757	99,547	294	3,886	64.4	303,491	162,164	42	..	1	2.3
	Pennsylvania System	1952	9,961	3,230,726	3,484,441	345,545	136,186	65.0	9,579,200	4,599,405	1,096	83	329	21.8
		1951	10,045	3,512,772	3,848,827	370,157	148,965	66.3	10,233,570	4,886,929	1,311	..	315	19.4
	Reading	1952	1,320	396,359	404,584	28,253	14,970	63.1	1,195,428	643,789	190	10	31	13.4
		1951	1,311	405,603	421,831	31,336	15,737	65.1	1,236,183	669,380	191	3	38	16.4
	Western Maryland	1952	836	205,043	241,464	27,294	7,343	62.9	603,716	337,205	125	4	20	13.4
		1951	837	207,753	245,867	27,297	7,654	62.6	628,960	346,644	125	9	16	10.7
Pocahontas Region	Chesapeake & Ohio	1952	5,037	1,436,584	1,504,099	54,373	64,317	56.7	5,566,012	3,065,678	482	35	208	28.7
		1951	5,042	1,585,706	1,664,986	67,736	67,993	57.9	5,730,178	3,114,678	524	6	237	30.9
	Norfolk & Western	1952	2,113	748,097	791,314	59,444	34,134	58.0	3,063,932	1,655,650	244	12	23	8.2
		1951	2,113	785,753	834,961	64,274	36,902	60.1	3,213,523	1,754,646	250	18	16	5.6
Southern Region	Atlantic Coast Line	1952	5,461	952,629	952,696	12,426	31,358	59.5	2,239,473	994,444	290	24	26	7.6
		1951	5,434	1,016,396	1,024,818	15,101	31,107	62.4	2,169,569	977,352	351	10	91	20.1
	Central of Georgia	1952	1,754	243,168	244,855	4,530	8,312	69.7	555,973	265,098	89	3	5	5.2
		1951	1,765	320,722	324,853	5,103	8,943	73.0	577,992	276,342	105	1	10	8.6
	Gulf, Mobile & Ohio	1952	2,830	324,874	324,874	335	16,747	72.4	1,094,247	532,042	80	..	6	7.0
		1951	2,851	340,704	340,704	147	18,147	75.0	1,140,151	550,644	80	..	3	3.6
	Illinois Central	1952	6,539	1,551,347	1,556,044	53,951	55,483	64.0	3,962,174	1,834,854	569	4	80	12.3
		1951	6,539	1,660,189	1,668,951	59,063	59,509	64.6	4,238,710	1,971,566	581	..	74	11.3
	Louisville & Nashville	1952	4,756	979,338	1,029,342	26,424	34,691	64.8	2,510,164	1,261,198	266	67	57	14.6
		1951	4,769	1,156,911	1,226,702	32,868	36,731	65.4	2,632,083	1,317,640	333	11	109	24.1
	Nash., Chatt. & St. Louis	1952	1,032	221,000	225,451	3,993	7,320	72.7	475,133	229,871	48	9	6	9.5
		1951	1,049	225,745	230,579	3,899	7,468	76.4	457,060	220,766	74	..	26	26.0
	Seaboard Air Line	1952	4,135	800,493	809,610	5,416	29,624	64.4	2,110,167	938,038	213	42	26	9.3
		1951	4,136	826,688	856,727	4,802	29,497	67.1	2,029,699	921,899	251	16	63	19.1
	Southern	1952	6,264	1,166,513	1,166,719	13,017	42,718	70.0	2,717,711	1,246,058	342	35	82	17.9
		1951	6,302	1,376,123	1,385,500	15,135	47,883	71.0	2,984,380	1,359,114	401	7	172	29.7
Northwestern Region	Chicago & North Western	1952	7,889	805,941	816,460	18,983	30,411	66.8	2,045,856	957,947	275	15	148	33.8
		1951	7,920	941,186	959,377	23,487	34,621	70.3	2,316,743	1,107,872	326	6	133	28.6
	Chicago Great Western	1952	1,441	144,733	144,831	2,957	8,291	71.5	535,392	244,787	33	..	1	2.9
		1951	1,441	146,209	146,209	6,549	9,252	71.9	594,729	270,652	39	..	..	..
	Chic., Milw., St. P. & Pac.	1952	10,663	1,172,938	1,212,016	44,675	46,017	66.0	3,143,355	1,432,399	388	55	81	15.5
		1951	10,664	1,313,306	1,362,700	54,666	50,398	68.4	3,331,494	1,530,531	454	43	77	13.4
	Chic., St. P., Minn. & Omaha	1952	1,606	216,083	223,415	12,394	6,028	65.8	428,852	199,388	56	2	46	44.2
		1951	1,606	206,350	215,949	12,150	5,813	68.7	390,996	174,256	75	1	23	23.2
	Duluth, Missabe & Iron Range	1952	567	40,027	40,625	1,054	734	50.2	76,547	34,509	66	6	10	12.2
		1951	565	45,350	46,325	1,102	625	39.0	59,022	23,458	35	9	19	30.2
	Great Northern	1952	8,181	1,070,915	1,078,837	41,577	39,618	68.0	2,778,215	1,277,165	329	114	69	13.5
		1951	8,220	1,143,591	1,149,176	59,854	40,910	69.1	2,768,381	1,291,427	341	93	61	12.3
	Minneap., St. P. & S. Ste. M.	1952	4,173	420,989	426,397	3,253	13,392	64.6	915,888	429,961	115	..	11	8.7
		1951	4,179	431,732	440,492	6,841	14,007	65.8	932,491	433,480	105	..	16	13.2
	Northern Pacific	1952	6,591	821,011	852,450	36,361	32,527	67.1	2,295,616	1,061,046	333	13	69	16.6
		1951	6,591	825,452	858,068	43,899	32,726	73.8	2,186,373	1,046,101	330	12	67	16.4
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1952	13,073	2,481,468	2,594,921	106,563	108,485	67.4	7,201,171	2,964,102	572	76	141	17.9
		1951	13,096	2,845,525	3,027,793	97,591	120,769	66.3	8,018,834	3,162,377	648	78	147	16.8
	Chic., Burl. & Quincy	1952	8,758	1,100,718	1,106,740	39,462	47,359	67.9	3,156,602	1,444,924	357	43	105	20.8
		1951	8,788	1,325,263	1,345,508	54,284	57,172	66.2	3,935,180	1,812,974	397	29	120	22.0
	Chic., Rock I. & Pac.	1952	7,902	1,105,016	1,114,956	12,843	40,970	63.5	2,889,580	1,217,275	224	10	54	18.8
		1951	7,903	1,180,107	1,200,328	20,230	42,335	62.1	2,883,227	1,246,221	256	3	71	21.5
	Denver & R. G. Wn.	1952	2,333	311,124	344,273	43,500	14,341	71.7	992,506	486,346	98	23	30	19.9
		1951	2,334	311,915	338,783	41,454	13,946	72.0	930,353	457,860	107	37	22	13.3
	Southern Pacific	1952	8,081	2,078,578	2,184,609	244,378	96,140	68.8	6,343,748	2,745,514	614	22	173	21.4
		1951	8,054	2,152,491	2,270,436	287,745	99,633	70.3	6,426,366	2,774,569	722	11	135	15.6
	Union Pacific	1952	9,867	2,436,107	2,542,877	171,113	100,910	67.2	6,887,209	3,126,870	588	44	157	19.9
		1951	9,720	2,575,793	2,694,448	198,153	108,316	68.7	7,251,257	3,221,914	601	53	125	16.0
	Western Pacific	1952	1,190	240,591	244,104	17,524	10,905	71.1	708,947	326,193	42	5	7	13.0
		1951	1,190	229,391	238,377	31,500	11,963	77.8	736,182	346,520	42	17	34	36.6
Southwestern Region	International-Gt. Northern*	1952	1,104	193,737	193,737	302	6,731	62.3	510,283	231,368	46	..	11	19.3
		1951	1,104	214,197	214,700	282	7,399	66.1	540,092	248,433	54	1	7	11.3
	Kansas City Southern	1952	886	191,976	192,200	227	10,137	69.7	713,449	349,681	28	5	8	19.5
		1951	886	197,481	198,543	904	10,453	69.0	700,914	327,923	36	9	15	25.0
	Mo.-Kans.-Texas Lines	1952	3,230	422,124	423,924	6,792	16,325	64.1	1,095,335	475,173	87	13	3	2.9
		1951	3,231	451,919	455,804	7,073	17,553	64.5	1,140,317	544,637	81	13	36	27.7
	Missouri Pacific*	1952	6,933	1,239,493	1,245,900	16,795	48,152	67.2	3,299,878	1,475,661	319	14	50	13.1
		1951	6,942	1,423,968	1,453,049	21,418	52,903	68.0	3,524,814	1,605,635	364	..	57	13.5
	Texas & Pacific	1952	1,832	368,440	368,440	16,299	15,557	64.4	1,072,932	414,871	57	12	22	24.2
		1951	1,844	396,986	396,986	18,665	15,581	63.5	1,085,872	415,575	86	3	1	1.1
	St. Louis-San Francisco	1952	4,567	675,321	676,894	6,503	24,882	65.4	1,694,975	760,037	184	39	53	19.2
		1951	4,604	736,960	745,395	7,586	26,577	66.9	1,754,989	783,709	196	78	86	23.9
	St. Louis Southw. Lines	1952	1,562	362,245	366,442	4,946	16,700	73.8	1,010,109	451,533	60	24	11	11.6
		1951	1,562	412,710	413,736	5,864	17,621	72.4	1,057,483	472,710	79	8	15	14.7
	Texas & New Orleans	1952	4,290	805,327	805,501	24,892	31,761	68.9	2,144,271	960,865	224	..	53	19.1
		1951	4,314	885,949	886,363	19,126	31,510	70.8	2,077,752	931,799	223	..	47	17.4

For the Month of March 1952 Compared with March 1951

Region, Road and Year		Freight cars on line				G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
		Home	Foreign	Total	Per Cent B.O.									
New Eng. Region														
Boston & Maine	1952	1,262	8,312	9,574	2.6	43,070	2,559	1,049	26.3	943	52.7	5,605	16.9	101.0
	1951	1,090	8,753	9,843	1.7	39,315	2,472	1,020	25.3	885	49.7	5,645	15.9	108.1
N. Y., N. H. & Htfd	1952	1,706	14,099	15,805	3.5	38,908	2,479	1,038	25.6	666	37.0	5,833	15.7	116.1
	1951	1,417	16,047	17,464	1.3	37,609	2,512	1,055	26.5	571	31.9	6,238	15.0	114.2
Great Lakes Region														
Delaware & Hudson	1952	4,661	5,307	9,968	5.9	62,021	3,209	1,689	37.2	1,430	55.7	17,347	19.4	74.6
	1951	2,528	6,325	8,853	4.1	58,860	3,130	1,673	37.2	1,652	63.5	18,376	18.9	53.1
Del., Lack. & Western	1952	6,167	10,634	16,801	5.2	50,619	3,058	1,400	29.6	796	37.8	13,466	16.8	131.8
	1951	4,927	11,638	16,565	7.4	46,254	3,032	1,377	28.8	803	38.9	13,380	15.5	100.3
Erie	1952	8,442	19,781	28,223	4.2	62,133	3,607	1,539	26.4	1,073	58.4	13,617	17.4	126.0
	1951	6,157	23,125	29,282	3.8	59,141	3,421	1,417	25.8	1,074	61.4	14,039	17.4	109.4
Grand Trunk Western	1952	3,228	8,039	11,267	4.9	47,970	2,319	1,000	29.4	714	38.5	8,853	20.8	132.6
	1951	3,286	12,298	15,584	4.8	46,317	2,490	1,086	28.5	657	34.4	10,453	18.9	145.9
Lehigh Valley	1952	1,883	13,021	14,904	6.2	66,972	3,377	1,611	31.5	849	38.4	10,495	20.1	208.2
	1951	3,833	11,050	14,883	6.2	63,937	3,301	1,530	30.0	843	40.0	10,341	19.6	160.7
New York Central	1952	59,664	95,956	155,620	7.1	45,846	2,709	1,212	32.1	674	34.0	10,029	17.2	84.1
	1951	50,731	123,549	174,280	4.3	41,985	2,675	1,206	31.5	747	37.4	11,910	15.9	94.5
New York, Chic. & St. L.	1952	6,336	19,117	25,453	5.4	48,679	2,750	1,240	31.3	1,288	62.4	15,218	18.0	122.3
	1951	4,911	22,503	27,414	3.4	46,209	2,661	1,193	30.6	1,260	61.2	15,776	17.7	128.4
Pitts. & Lake Erie	1952	3,112	11,027	14,139	8.8	53,113	3,708	2,203	50.1	467	14.5	28,726	14.4	67.6
	1951	3,037	10,705	13,742	10.6	50,564	3,447	2,103	50.5	500	14.4	30,753	14.7	82.4
Wabash	1952	6,822	11,992	18,814	4.6	62,974	2,808	1,194	26.6	1,098	58.2	9,040	22.6	114.5
	1951	4,779	13,814	18,593	2.5	54,978	2,663	1,145	26.5	1,069	56.3	9,274	21.0	98.5
Central Eastern Region														
Baltimore & Ohio	1952	47,751	43,177	90,928	5.5	44,826	3,097	1,527	37.1	888	37.1	13,383	14.6	85.3
	1951	45,225	64,760	109,985	5.1	40,222	2,942	1,456	37.4	853	35.2	14,852	13.9	88.4
Central of New Jersey	1952	352	8,871	9,223	3.8	36,677	2,957	1,563	39.2	379	14.3	8,537	12.9	98.3
	1951	282	9,009	9,291	2.5	37,945	2,903	1,484	37.0	372	14.9	8,689	13.7	88.6
Central of Pennsylvania	1952	2,320	2,982	5,302	20.2	42,786	3,195	1,682	40.6	642	24.0	16,409	14.1	74.8
	1951	1,473	3,429	4,902	15.5	41,144	2,980	1,589	37.5	745	27.9	16,483	15.0	76.7
Chicago & Eastern Ill.	1952	2,637	3,255	5,892	4.4	45,597	2,658	1,241	31.9	919	44.7	6,162	17.2	159.0
	1951	1,734	3,918	5,652	6.6	44,370	2,822	1,341	31.0	991	46.9	6,496	15.8	169.0
Elgin, Joliet & Eastern	1952	6,479	11,584	18,063	3.7	20,509	2,870	1,548	43.1	228	8.3	19,637	7.3	98.5
	1951	5,760	17,027	22,787	2.1	17,547	3,247	1,735	41.7	232	8.6	21,979	5.7	125.4
Pennsylvania System	1952	94,490	119,240	213,730	8.6	49,348	3,048	1,463	33.8	695	31.6	14,895	16.6	88.1
	1951	88,735	119,850	208,585	9.4	43,605	3,004	1,434	32.8	745	34.3	15,694	15.0	92.0
Reading	1952	15,218	17,016	32,234	4.2	39,112	3,016	1,624	43.0	627	23.1	15,733	13.0	72.4
	1951	10,947	20,218	31,165	3.5	38,657	3,049	1,651	42.5	663	23.9	16,471	12.7	75.1
Western Maryland	1952	6,095	3,364	9,459	2.2	43,367	3,000	1,676	45.9	1,150	39.8	13,011	14.7	62.7
	1951	4,459	3,993	8,452	2.8	40,712	3,065	1,689	45.3	1,260	44.4	13,360	13.4	62.3
Pocahontas Region														
Chesapeake & Ohio	1952	53,069	25,050	78,119	4.7	69,949	3,915	2,156	47.7	1,302	48.2	19,633	18.1	75.7
	1951	48,148	26,445	74,593	5.3	59,778	3,661	1,960	45.8	1,415	53.3	19,927	16.5	77.5
Norfolk & Western	1952	34,796	7,530	42,326	2.5	68,157	4,175	2,256	48.5	1,235	43.9	25,276	16.6	105.8
	1951	29,425	8,991	38,416	3.1	67,362	4,156	2,269	47.5	1,524	53.3	26,787	16.5	110.1
Southern Region														
Atlantic Coast Line	1952	14,443	20,490	34,933	3.3	39,613	2,363	1,049	31.7	926	49.0	5,874	16.9	92.6
	1951	10,701	20,285	30,986	2.3	33,718	2,149	968	31.4	952	48.6	5,802	15.8	81.9
Central of Georgia	1952	2,510	6,276	8,786	6.3	40,355	2,301	1,097	31.9	963	43.3	4,875	17.7	87.8
	1951	1,768	7,006	8,774	3.0	31,324	1,810	865	30.9	1,033	45.8	5,051	17.4	99.4
Gulf, Mobile & Ohio	1952	4,291	10,283	14,574	4.0	66,890	3,375	1,641	31.8	1,145	49.8	6,065	19.9	130.9
	1951	2,804	10,785	13,589	2.5	63,688	3,356	1,621	30.3	1,291	56.8	6,230	19.0	141.5
Illinois Central	1952	26,162	29,062	55,224	2.4	44,234	2,585	1,197	33.1	1,055	49.8	9,052	17.3	85.1
	1951	21,273	37,870	59,143	1.8	44,125	2,581	1,201	33.1	1,130	52.8	9,726	17.3	90.7
Louisville & Nashville	1952	32,373	15,385	47,758	5.5	40,909	2,568	1,290	36.4	852	36.2	8,554	16.0	91.6
	1951	31,883	18,793	50,676	7.4	35,552	2,283	1,143	35.9	892	38.0	8,913	15.6	97.3
Nash., Chatt. & St. Louis	1952	1,630	5,003	6,633	3.3	42,313	2,153	1,042	31.4	1,119	49.0	7,185	19.7	128.5
	1951	1,060	5,257	6,317	2.3	39,960	2,026	979	29.6	1,144	50.6	6,789	19.7	87.8
Seaboard Air Line	1952	10,807	17,139	27,946	1.7	48,229	2,693	1,197	31.7	1,078	52.9	7,318	18.3	105.7
	1951	8,414	16,740	25,154	2.0	43,801	2,510	1,140	31.3	1,176	56.1	7,190	17.8	96.6
Southern	1952	14,203	28,217	42,420	3.5	40,521	2,342	1,074	29.2	931	45.7	6,417	17.4	90.7
	1951	13,080	30,024	43,104	3.3	35,760	2,187	996	28.4	1,013	50.3	6,957	16.5	83.5
Northwestern Region														
Chicago & North Western	1952	20,526	28,823	49,349	3.8	42,645	2,656	1,244	31.5	621	29.5	3,917	16.8	67.1
	1951	14,905	37,472	52,377	3.2	38,556	2,584	1,236	32.0	663	29.5	4,512	15.7	76.3
Chicago Great Western	1952	1,392	4,828	6,220	3.4	71,007	3,713	1,698	29.5	1,279	60.6	5,480	19.2	145.8
	1951	947	7,217	8,164	2.3	65,176	4,084	1,859	29.3	1,079	51.3	6,059	16.0	139.4
Chic., Milw., St. P. & Pac.	1952	31,605	30,379	61,984	3.0	46,494	2,697	1,229	31.1	737	35.9	4,333	17.3	82.8
	1951	22,523	42,939	65,462	2.0	39,963	2,554	1,173	30.4	736	35.4	4,630	15.8	85.8
Chic., St. P., Minn. & Omaha	1952	1,053	8,169	9,222	3.5	32,332	2,065	960	33.1	656	30.1	4,005	16.3	77.5
	1951	945	9,276	10,221	1.9	24,604	1,964	875	30.0	564	27.4	3,500	13.0	81.3
Duluth, Missabe & Iron Range	1952	13,885	1,696	15,581	1.8	29,681	2,055	926	47.0	76	3.2	1,963	15.5	20.6
	1951	13,075	1,220	14,295	1.9	19,667	1,457	579	37.5	65	4.4	1,339	15.1	29.5
Great Northern	1952	22,586	20,343	42,929	3.8	45,035	2,612	1,201	32.2	955	43.5	5,036	17.4	76.5
	1951	15,081	23,439	38,520	3.3	39,214	2,436	1,137	31.6	1,190	54.6	5,068	16.2	83.5
Minneap., St. P. & S. Ste. M.	1952	6,135	8,762	14,897	5.4	42,118	2,195	1,030	32.1	862	41.6	3,324	19.4	123.9
	1951	4,836	12,579	17,415	6.2	38,058	2,190	1,018	30.9	853	41.9	3,346	17.6	130.6
Northern Pacific	1952	18,941	18,024	36,965	5.4	49,654	2,813	1,300	32.6	944	43.1	5,193	17.8	75.3
	1951	13,907	17,262	31,169	4.8	45,644	2,671	1,278	32.0	1,146	48.6	5,120	17.2	77.4
Central Western Region														
Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1952	46,253	32,599	78,852	4.4	62,906	2,912	1,199	27.3	1,202	65.3	7,314	21.7	116.1
	1951	40,341	39,538	79,879	3.8	59,092	2,829	1,116	26.2	1,350	77.8	7,790	21.0	121.2
Chic., Burl. & Quincy	1952	16,702	24,902	41,604	3.7	57,928	2,875	1,316	30.5	1,126	54.4	5,322	20.2	76.2
	1951	14,796	27,857	42,653	2.4	55,117	2,983	1,374	31.7	1,319	62.8	6,655	18.6	87.1
Chic., Rock I. & Pac.	1952	11,119	24,391	35,510	3.6	49,557	2,631	1,108	29.7	1,098	58.3	4,969	19.0	132.1
	1951	9,010	25,729	34,739	2.8	43,521	2,456	1,062	29.4	1,179	64.5	5,087	17.8	125.2
Denver & R. G. Wn.	1952	7,413	7,662	15,075	2.9	53,902	3,205	1,570	33.9	1,045	43.0	6,725	16.9	84.9
	1951	7,380	5,651	13,031	3.5	52,595	2,997	1,475	32.8	1,105	46.8	6,328	17.6	78.8
Southern Pacific	1952	26,246	46,973	73,219	2.8	53,778	3,089	1,337	28.6	1,224	62.3	10,960	17.6	102.1
	1951	22,961	43,208	66,169	2.7	50,852	3,020	1,304	27.8	1,399	71.5	11,113	17.0	100.4
Union Pacific	1952	29,151	35,787	64,938	2.8	64,240	2,870	1,303	31.0	1,553	74.6	10,223	22.7	112.8
	1951	24,098	38,864	62,962	2.1	62,548	2,862	1,272	29.7	1,714	83.9	10,693	22.2	123.2
Western Pacific	1952	2,305	2,833	5,138	6.0	68,444	2,997	1,379	29.9	2,077	97.7	8,842	23.2	140.6
	1951	1,476	4,320	5,796	7.7	72,005	3,224	1,518	29.0	2,136	94.8	9,393	22.4	95.3
Southwestern Region														
International-Gt. Northern*	1952	961	7,705	8,666	2.3	53,450	2,645	1,199	34.4	863	40.3	6,760	20.2	116.0
	1951	825	6,991	7,816	1.7	49,197	2,548	1,172	33.6	1,037	46.7	7,259	19.5	115.5
Kansas City Southern	1952	1,186	6,700	7,886	4.7	75,433	3,748	1,837	34.5	1,445	60.1	12,731	20.4	158.5
	1951	969	6,642	7,611	3.4	67,253	3,597	1,683	31.4	1,452	67.1	11,939	18.9	117.0
Mo.-Kans.-Texas Lines	1952	3,737	7,876	11,613	6.0	54,276	2,599	1,128	29.1	1,316	70.6	4,746	20.9	131.7
	1951	2,484	7,684	10,168	4.4	49,052	2,530	1,209	31.0	1,732	86.6	5,438	19.4	118.8
Missouri Pacific*	1952	18,191	17,226	35,417	3.0	57,096	2,679	1,198	30.6	1,347	65.5	6,866	21.4	113.7
	1951	13,969	20,057	34,026	2.2	50,554	2,492	1,135	30.4	1,516	73.5	7,461	20.4	121.3
Texas & Pacific	1952	2,056	8,172	10,228	5.0	65,141	2,916	1,128	26.7	1,293	75.3	7,305	22.4	119.1
	1951	2,120	7,828	9,948	6.1	58,598	2,745	1,050	26.7	1,316	77.7	7,270	21.4	159.6
St. Louis-San Francisco	1952	10,536	13,569	24,105	2.8	47,546	2,521	1,130	30.5	1,023	51.2	5,368	18.9	81.1
	1951	6,467	16,029	22,496	3.0	42,448	2,387	1,066	29.5	1,145	58.0	5,491	17.8	74.5
St. Louis Southw. Lines	1952	1,891	4,889	6,780	2.0	57,916	2,790	1,247	27.0	2,145	107.5	9,325	20.8	122.9
	1951	1,417	5,456	6,873	2.0	50,983	2,567	1,147	26.8	2,156	110.9	9,762	19.9	140.2
Texas & New Orleans	1952	4,677	18,954	23,631	2.6	50,857	2,689	1,205	30.3	1,322	63.4	7,225	19.1	102.2
	1951	3,036	17,143	20,179	2.8	45,435	2,369	1,063	29.6	1,379	65.9	6,968	19.4	112.3

*Report of trustee or trustees.

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